







THE

FAMILY PHYSICIAN

AND

GUIDE TO HEALTH;

A SYSTEM OF

DOMESTIC MEDICINE.

INCLUDING

A TREATISE ON MIDWIFERY AND THE DISEASES PECULIAR TO WOMEN.

BY

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PREFACE.

After finishing the last page I now commence to write the first—the preface, apology, advertisement, "puff," or whatever the reader may choose to call it.

I have no apology to offer. I have done the very best I could in preparing the matter for this work. I have diligently consulted the ablest, latest and best authorities in medical literature, coming from both Europe and America, and have tried hard to present the accepted facts of the history, symptoms and treatment of diseases in plain, simple and common-place language, so that every school boy or girl of intelligence can understand and comprehend them. I have given the symptoms plainly and laid down the treatment, not only on general principles, but specially, stating exactly what to give, how much of it to give at a time, and how often to give it. By this means I have placed a great amount of valuable information within easy reach of the common people information, too, upon which may depend their health, happiness or lives, or that of those dependent upon them.

I neither deprecate nor invite criticism, believing that the critic has neither a very wide nor profitable field for his fault-finding skill. If my unpresuming book finds favor with the intelligent public, I will be content to let critics fume and fret, and enemies sneer and curl the lip with the scorn they try to feel. A few physicians, from selfish motives, may try to discourage the masses from patronizing the work, but I flatter myself that it will receive the hearty approval of a large majority of those who have kept themselves posted in the standard medical literature of the day. The intelligent physician wants an intelligent and well-informed patient: with such an one his labor is easy and pleasant. It is only those who do not know quite as much as they really should who try to keep the common people in ignorance in regard to the symptoms and treatment of disease. They fear the light of knowledge; they know in it their own feeble light would shine but dimly.

If there is any one subject pertaining to this life of more importance to mankind than another it certainly is that of medicine and the laws of health. This subject man has a perfect right to investigate, a perfect right to sift to the very bottom and understand most thoroughly. It is not only his right to do this, but it is his duty. The man who has a family dependent upon him—their daily bread depending upon his toil—has no right to be sick; he has no right to violate the laws of health and life and thereby render himself unable to provide for those de-

pendent upon him; he has no right to shorten his life by ignorance or imprudence. The Creator allotted him a time to live; he made certain laws by which he should be governed; these laws are immutable and must be obeyed: if they are, man will live out his "three score years and ten;" if they are violated, pain, suffering and premature death are the penalties. In order to be able to obey them man must know them. He is not born with that knowledge. The lower animals are born with instinct by which they are often enabled to shun danger, but it is not so with man; he is born without instinct, without intelligence and without knowledge; all that he ever knows he must learn. He knows nothing of the laws governing life or health but what is taught him or he learns by his own observation and experience. He can not obey these laws without knowing them; therefore it is necessary that all men should be taught. For this purpose I offer this book as one of the texts to place in the hands of the people in order to accomplish this great work. The premature decay and death I see around me every day demand it. I take pleasure in offering it to the public on its own merit. I have not attempted to array, a lot of certificates, medals or paid-for recommendations; if it has not sufficient merit to recommend it to the favor of an intelligent people, let it "fall still-born." I have diligently labored for months getting together facts, condensing and preparing them for the common reader—facts the latest and best in medical science. I am not afraid to trust the decision to an enlightened public.

It is true there is already a vast amount of literature in the country, but a large class of it is of the sensation style that is only calculated to amuse; it neither benefits nor instructs, and, in fact, is apt to produce a disposition to crime that often crops out in after years. I heard a young lady the other day say, after reading Emerson Bennett's great story of the "Bandit Queen," that she wished she was a "Bandit Queen," or the wife of some dashing pirate, with a magnificent ship like the "Skimmer of the Seas." Such desires are the legitimate fruits of sensation stories; and, while a little light reading may be beneficial, or at least relax the mind for a time, too much of it leads to idleness and crime. I know also that there is a large amount of medical literature in the land, but it is not adapted to the common reader; it is filled with technicalities and medical terms that the common scholar does not understand, and he can not comprehend it. Medicines are called by Latin names, so that the most simple article can pass completely incog.; and diseases are even given such names that the common reader would not be able to recognize them. There are, however, a few family or domestic practices in the country, but the science of medicine is progressive; it has advanced as much in the last ten years as it had, perhaps, in half a century before. The practice has undergone an almost entire change; principles that were

considered orthodox then are abandoned now and substituted by more rational ones. The antiphlogistic regimen practiced then has given way to a pratice the very opposite—i. e., sustaining and palliative treatment in place of the mercury, antimony, bleeding and blistering that was relied upon then. Besides, great advancement in diagnosis has been made; diseases that could not be detected then in their incipiency can now be readily diagnosed and removed before they are fairly established. New remedies have been discovered, and old ones better understood. It is known now that the tincture of iron is a specific, almost, for erysipelas and diphtheria, while quinine is known to destroy malaria, and bromide of potassium to cure epilepsy, phthisic, &c. For these and other reasons it will be found necessary to procure the very latest and best medical literature.

During a practice of many years in the Mississippi Valley I have become acquainted with the type, character and treatment of the disease, generally prevalent in the South and West. I have seen the necessity of a work like this to place in the hands of the people. I believe in it I have, to a very great extent, supplied their wants. It is the first medical work of any importance ever written and published in the Mississippi Valley, and by a native, too, of that Valley. It remains to be seen what favor it will meet at the hands of the people of the West and South.

I feel in every way encouraged; men competent to

judge, standing high in the medical profession, have seen the proof sheets as they came from the press, and give me every encouragement and assurance that it will succeed, while orders are coming in daily for the book.

I feel confident that every family who look to their own interest and welfare will procure a book. Heads of families owe it to the rising generation to give them some insight into the science of medicine and the simple laws governing life and health.

Women ought to know, and are entitled to know, from some other source than the lips of a physician something about their peculiar organization and the offices they are called upon to perform, and the diseases peculiar to them, their treatment, &c., all of which are carefully and properly detailed in plain language in this work.

In writing the Family Physician and Guide to Health I have had constantly before me one cardinal object—to be useful. I have tried to arrange and present to the public a practical book in all its varied departments; tried to condense as much useful knowledge into as small a space as possible, and bring the work fully up to the wants of the common reader—fully up to the advanced state of conservative medicine—and it is, therefore, I think, the most eligible book before the people.

With a sincere desire that it may be the means of preventing much suffering and premature death, it is respectfully submitted by the

St. Louis, Mo., November, 1869.

AUTHOR.

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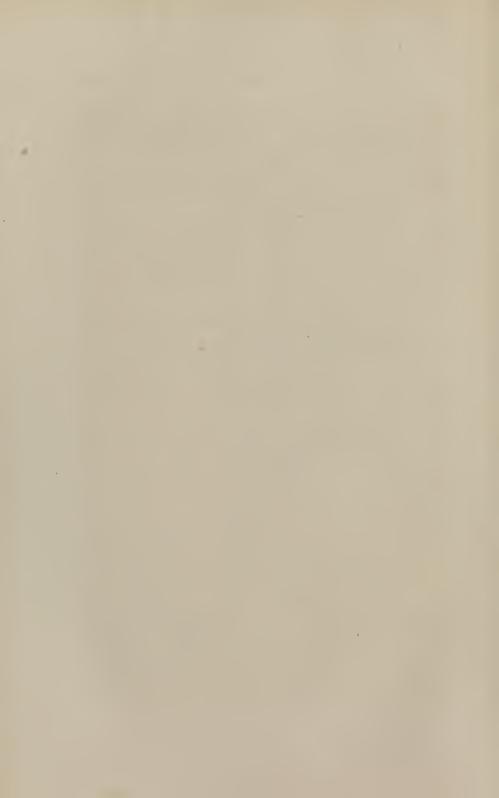
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THE FAMILY PHYSICIAN

AND

GUIDE TO HEALTH.

THE OBJECT OF MEDICINE.

The grand object of medicine is to preserve health, prolong life, cure disease, and thereby to forward the happiness of mankind. Happiness is the great object of human life; it is the object for which man toils; all his energies are bent in that direction. He racks his brain to discover in what direction happiness lies, and when he fancies that he can see its faint outlines in the dim and shadowy future, he nerves his energies, struggles on, and although obstacles loom up between him and his coveted object, he still struggles on, on. But are his efforts and labors properly directed? He has tamed the lightning by his efforts, and compels it to convey instant intelligence to the most distant and remote points of civilization; he even directs its course through the bosom of the ocean, in two great arteries, from this continent to Europe. By steam he drives the "iron horse" at the terrifying rate of almost lightning speed over hills, mountains, plains and valleys, through dark and dreary tunnels, and across mighty rivers, in one continued track

from the Atlantic to the Pacific ocean, bringing San Francisco within one week's journey of New York. But this is not all. By its power he runs all manner of machinery, from the modern grain thresher to the iron mills of Birmingham, and drives the immense floating palaces up against the strong current of our great rivers and across the raging, briny deep with indescribable rapidity, and is the great medium of our national commerce. He even navigates the air with a degree of certainty and rapidity that is perfectly marvelous. intellect he enters the fathomless space of the heavens and measures the dimensions and distances of the countless orbs that surround us, while he estimates with fractional correctness the orbits and the distances traveled by the sun, moon and stars, as well as the various laws by which those planets are governed; he traces the comet while it performs its stupendous revolutions, and gives long in advance the exact time, extent and description of an eclipse. He builds his palaces, and makes the most complicated machinery to work in perfect order and exactness; while almost every one is a "well-posted" politician. They are well posted in this, and in every conceivable plan to make money—laboring under the great mistake that to be rich is to be happy. Ask the millionaire, when he finds that disease has seized upon his vitals and he is prostrated in agony upon his couch, as the icy fingers of death begin to grapple about his heartstrings, what he would give for perfect health, and he will tell you, "All, all I have, and ten times as much, if I had it." Then his pursuit of happiness has not been properly directed.

You may converse with every man you meet on almost every subject that concerns man, and particularly any subject that is connected with money-making, and you will find his mind well stored, and he can go into the minutest particulars—you would almost take him to be a professor. But ask him, if you please, a simple question about the laws governing life and health, and his mind, in nine cases out of ten, will seem to you to be a blank. Why is this? Is it because health is of minor importance to mankind? Certainly not. There is no one so stupid not to know better than this; he knows the objects of his life are defeated when his health is lost; he knows that with the loss of health happiness recedes from him forever on earth; he knows that health is the greatest earthly blessing that he could enjoy; he knows that without it life is but a state of suffering and torment. Then it is not this, and we must look in some other direction for the cause.

It is a well known fact that physicians have always tried to hide their art in the rubbish of technicalities; how well they have succeeded the present ignorance of the common people on the subject of medicine furnishes an abundant answer. The mass of medical men have always striven to impress the minds of the common people with the belief that they (the people) were too ignorant to understand the subject. Every one has heard of priest-ridden people, who were deluded into the belief that they were too ignorant to pray; hence it was necessary for them (the priests) to do their praying for them, and for which they are fully as exorbitant in their charges as are many of the medical quacks of the present day. Now, when we take into account that money seems to be the grand object sought for, it is not to be wondered at that physicians have striven so hard to keep the common people chained in ignorance on this subject; for really if every one understood as much as he ought to, and as much as he could understand with very little pains, about the laws of life, the current of wealth that has long teemed

into the physician's pockets would cease, and man would soon begin to live out his three score years and ten.

I think I may safely say, without the fear of contradiction, that there has been practiced upon the people more humbuggery in medicine than in anything else. And why? Not because it is of little importance, but simply because they were more ignorant of it than anything else; and ignorance is the field that humbuggery thrives best in.

A pert son of Esculapius, just out of his teens as well as his nosology, blows his trumpet loud and long, and announces that he can cure consumption. There is a great flutter and much noise, and all who happen to have a cough call on the great professor, and for their hardearned money get an ill-advised prescription—written in a dead language, which neither they nor the young swell understand—which is taken to the druggist, who compounds it at random, not knowing whether it reads cinnamon or ammonia, if we are to credit the account in the daily papers, in which there is a case reported where an unfortunate individual lost his life by the druggist misreading Aq. cinnam. for Aq. amon. The result was. the patient got an over-dose of the ammonia and died from it. The prescription was: "R. aq. calcis, tinc. opii., ag. cinnam." Had it been written, "lime water, laudanum and cinnamon," says the N. Y. Journal of Commerce, "there would have been no room for the fatal error." Such cases are of daily occurrence. It does seem that it would begin to open the eyes of the people and make them clamor for plain English in all medical literature; but instead they only seem to hug the chains that have kept them so securely bound.

But there is another source of humbuggery that has assumed gigantic proportions, and is ruining the health

and depleting the pockets of its thousands. Without desiring to be severe on patent medicine makers and venders, I feel it my duty to denounce them as one of the great curses of the age—not that all the patent compounds are worthless, for some of them may be very excellent preparations for certain diseases, or certain stages of certain diseases; but in their great anxiety to extend the sale of their articles they unhesitatingly and without reserve recommend them as "specifics" for almost every disease that flesh and blood is heir to. I feel confident I have seen a single article thus recommended for twenty different diseases, the diseases not even belonging to the same class or in any way admitting of the same plan of treatment.

The people, as it would seem, anxious to be humbugged, greedily pay out their hard-earned money for these nostrums to torture their stomachs and ultimately destroy their constitutions. This they do doubly blind: first, they do not know what their diseases are, and, second, they do not know what they are taking. This is daily done by a people no less intelligent than the people of the United States—a people whose minds are cultivated, and who are well informed on every subject that is calculated to advance their happiness except the very important subject of medicine.

Does not every principle of humanity, mercy and philanthropy call for "more light" on the subject of domestic medicine?

Children, little buds of promise, young men and young women just blooming into beauty, middle aged men and women who have just ripened into the prime of life, are sinking around us daily into premature graves. Why is this? Did the Creator make a mistake in forming their organizations? Do they wear away and fail them

before their "three score years and ten" are accomplished? Or is it because of the violation of certain simple laws that God gave them for their government? There can be but one answer to this: there can be no effect without a cause. Man violates a law of health disease follows as the effect, the penalty. Whether this law of health has been violated wilfully or ignorantly it matters not, the penalty is the same. No allowance is made for either ignorance, accident or other circumstances; the laws are immutable and the penalty sure. If a man never violates a law of health he will never be sick, never. But, says the reader, will be never die? Yes, he will. This stalwart frame, however well developed and preserved it may have been by strict attention to and observance of the laws of health, must give way and succumb to the ravages of time.

> "Time, like an ever-rolling stream, Bears all its sons away; They fly forgotten, as a dream Dies at the opening day."

It is one of God's laws that all organized creatures must decay. But premature decay is a penalty for the violation of the laws given for the government of health. If man in his strength had a proper knowledge of the laws of health and life and would observe them, his days would be more happy, and he would live out his "three score years and ten."

With woman it is a little different. Her organization is different, rendering her obnoxious to quite a number of diseases that man can not be subject to, and diseases that seem to occur almost in the very course of things. I do not mean to say that many, very many, of the diseases that are now, and ever have been, dragging the daughters of earth down to premature death can not be avoided, for certainly they can; and I hope in the

pages of this book to give such rules and advice as will enable all sensible women not only to rid themselves, but to steer clear of most of the diseases peculiar to their sex. But from the GARDEN OF EDEN the immutable decree went forth from Almighty God himself:

"Unto the woman he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee."

While it is true that women are subject to a wider range of diseases than man, it is also true that she is endowed with more patience and fortitude, in so much that all that can not be avoided can be endured; patience and gentleness mark her nature.

Now, the object of this work is to give a plain guide to health, in language that any ordinary English scholar can understand—to make known to the "common people" the laws governing life and health, so that every one who will may enjoy that priceless boon; and, in addition to this guide, I have tried to lift the veil that physicians have so closely tucked around the symptoms and treatment of diseases and present them to the fair view of every one; and I state here, frankly, that there is nothing about the symptoms and treatment of diseases that the ordinary mind can not understand.

When the humbuggery, mystery, technicalities and other rubbish is removed from the subject, it will be seen to be simple and easy, and every one will be filled with wonder that he has so long allowed himself to be hoodwinked and played upon by the profession.

The practice that I shall offer is based upon common sense and reason. It is to aid and assist nature in her efforts to cure diseases; to sustain the system and not to lower it. Sustaining the system is giving life, lower-

ing it is taking it away; a destruction of the vital powers is death.

The true plan is: sustain the system, assist nature and palliate the symptoms. Trust more to nature and less to heroic remedies. The body possesses a perfectly marvelous power whereby it protects itself and cures diseases; it wards off some and cures by its own process others. This innate power is called vis natura medicatrix. Of itself it is able to cure numerous diseases; it is in all its influence beneficial; and the remedies that are in their own nature the best are only of use in as far as they stimulate, direct and control this inherent virtue. Without this curing principle in the human body diseases could not be cured; when the body was prostrated by disease all hope would be lost. It would be like a decay in a piece of seasoned timber; the process of decay might be stopped for a time, but no application could be made or means used to restore it to its original soundness. Now, if the system is lowered this power in nature is decreased, and by a continued depletory course it is finally extinguished and the patient must die. Any plan of medication that does not, directly or indirectly, sustain or palliate is worse than useless—yea, positively injurious. Keep this great principle in mind and you can not materially err. Upon this plan, and this plan alone, medicine can fulfill the grand object for which it was intended, viz: "Preserve health, prolong life, cure diseases, and thereby forward the happines of mankind."

In the prevention or treatment of a disease our science culminates and becomes an art. Unless it can accomplish one or the other of these ends the world would do as well without as with our aid. It is of some value to know the probabilities of our state, but it is of comparatively small value to have this knowledge if we can do nothing either to ward off, alleviate or cure disease. We may prepare some people for the worst, we may dispel some groundless fears; but our mission is to do more than this—we have to try to "cure the curable and comfort the incurable."

In the prevention of disease regard is had to the condition in which the individual is placed, to his hereditary or acquired constitutional peculiarities, and to the minute physical functions or functional departures from health which we may discover. In the treatment of disease no one of these can be lost sight of with impunity, but we are guided principally by the actual symptoms present at the time. These symptoms, however, it must be remembered, are of two orders: from the one set we learn the actual physical condition of an organ, or a group of organs, such as inflammation of a lung, congestion of the liver, or paralysis of one side of the body; while from the other series we become acquainted with the state of the system generally, whether this be antecedent to the local change, its cause, its effect, or a mere coincidence of its existence; and from such a group of symptoms we infer the existence of discrasiæ, such as tuberculosis, carcinoma, or the like, and appreciate the presence of vigor, or of asthenia, of sound constitution, or of impaired health and wasted strength.

To the most superficial observer it must be obvious that therapeutics has undergone great and important changes; that the mode of treatment now adopted for many diseases is just the opposite of that which was in vogue a few years ago, and which lingers even in recent editions of standard books, although many of their authors have long since ceased to follow the directions which they still give to others.

A few years ago the treatment of inflammation of an

important organ was laid down definitely: such and such things were to be done, and no questions were to be asked as to whether the case was of this, that or the other type. Inflammation was there, and blood was to be taken; low diet was to be enjoined, and lowering medicines were to be exhibited; and supposing the inflammation did not yield, the forces of attack were to be again placed in action. But here there crept in some distrust of the theory evidently at the bottom of the practice, for, instead of general bleeding, leeching or cupping was to be employed, and then only to a mild degree. Somehow or other the inflammation was to be put down; and it not rarely happened that the process urged against the bugbear "inflammation" proved fatal or highly injurious to the patient. Now we find it written, that if such conditions are found—a hard, full, strong, frequent pulse, with great heat of skin, no prostration, impending evil from this condition being patent as the phenomena themselves—then bleeding, antiphlogistics, and the like, must be employed. But, as a matter of fact, we do not find these cases, and the more common on dit of medical practice is to the effect that as the inflammation seemed extending, the quantity of wine has to be doubled, the supplies of beef tea increased, and bark and ammonia given more frequently. Partly to account for and partly to justify so material a change in our modes of dealing with disease, it has been assumed by some that the vis vitæ of the human constitution has undergone a change, or has been lessened, or that the so called "type" of its maladies have altered—an assumption that has little to be said in its defense, and still less than can be regarded as its establishment. A more simple and, I believe. accurate explanation of the change is to be found in this: That previously theory was the ground-work of therapeutics, and that now fact is the basis of treatment; that years ago diseases were treated by their names, and that now they are treated by their known conditions; that local changes were the main guides in times gone by, but that the general state of the patient is that which in these days the physician esteems as his therapeutical informant.

When pathology scarcely existed medical practice was an empirical art, and had, with the few advantages of that position, all its evils; whereas, with the growth of pathology, therapeutics, still an art, has become, or is becoming, a science; and knowing more accurately the limits of its powers is content to attempt less "heroic measures," being convinced that it does less harm. Much is done by medical treatment now—more real good than ever was done before—but it is done in a different way and with another aim. Disease is detected in its earlier stages and often arrested there, and when developed the patient is guided through it, if he can be, and is not sacrificed to some wild attempts to destroy the disease.

What we now believe and act upon is no set theory regarding the nature of particular diseases, or disease in general. Modern times have not been devoid of theories upon which the fathers of medicine would justly have turned their backs in derision; but such notions, although they may have misguided a few individuals, have soon found their proper place, or no place at all, in the science of the day. What we believe now and act upon is, a better knowledge of the laws and relations of morbid change. We see that the man is greater than his maladies; that his general condition is of more importance than his local ailments; that disease is a change in him rather than in some part of him, and that no treatment can be

of any real service which sacrifices the greater to the less. In all treatment, therefore, what is general is to be dealt with upon the basis of a true appreciation of the general pathological condition, and this, in spite of all theories in regard to local changes, however they may be termed, whether they come to us hoary with age, or scarcely intelligible, and even sometimes ludicrous with their novelty. If the general condition be one of weakness, it matters not that the brain, the heart, or the lungs may be in the state of so-called "inflammation," the weakness is the one thing that demands immediate treatment, and to neglect its treatment is to run the risk of sacrificing the patient to a theory of a compound state even now but imperfectly understood.

This is the starting point, the essential element in therapeutics; but the mode in which the treatment should be applied will often be determined by the nature and position and origin of the special lesion; and those conditions of the latter will direct the management of those means and appliances which, employed locally, will prove of service to the injured organ.

HEALTH---HYGIENE.

Health is the greatest blessing man can have vouchsafed to him on earth. Its preservation becomes a matter, then, of the first importance. This may be accomplished by obeying its laws. A few of those laws I will proceed to give, first noticing a few simple rules of diet.

Nature delights in the most simple food, and every animal, except man, follows her dictates. Man alone riots at large, and ransacks the whole creation in quest of luxuries, to his own destruction. A clever writer on diet speaks thus, "For my part, when I behold a fashionable table set out in all its magnificence I fancy that I see gouts and dropsies, fevers and lethargies, with other innumerable distempers, lying in ambuscade among the dishes."

Some writers claim that we feed too much, while others think we feed too little; some advocate a strictly vegetable diet, and offer as a conclusive argument that man in his primeval state of simplicity never ate any animal food; that Adam and Eve, previous to the transgression, were not permitted to kill any animal nor partake of any meat, as appears by the command of their Maker, recorded in the Bible. If we go back to the times of King Nebuchadnezzar, spoken of in the Scripture, we will find there a triumph over the flesh eating Babylonians, by the experiment made in the case of four children of Judah, who refused the King's meat and drink,

and confined themselves simply to their puls and water, and yet, for wisdom and fairness of face and proportion, none was found like them in all the King's realm.

Porphyry, of Tyre, the Platonist, who flourished about the third century, in his book concerning animal food, addressed to Firmus Castricus, who had relinquished the Pythagorean system, tells him as follows: "You admitted, when you lived among us, that a vegetable diet was better than animal food, both for preserving health and to facilitate the study of philosophy; and now, since you have eaten flesh, your own experience must convince you that what you then confessed was true. It was not from among those who have lived on vegetables that robbers and murderers, sycophants or tyrants, proceeded, but from flesh eaters."

You ask me, says Plutarch, "why Pythagoras abstained from eating the flesh of brutes? For my part, I am astonished to think, on the contrary, what appetite induced man to taste of a dead carcass; or what motive could suggest the notion of nourishing himself with the flesh of animals which he saw the moment before, bleating, bellowing, walking and looking about them."

In countries where people have lived almost entirely upon vegetable diet they have been the most healthy, robust, active and cheerful.

The eating of flesh daily serves to increase the passions, subjects the person to numerous diseases, and shortens life. This I conceive to be in the abuse of the article; as alcohol, opium, &c., become a curse when used too much, in like manner flesh becomes a curse to our race. There is a happy medium, however, I think, between the advocates of animal diet and vegetable diet that we may take to advantage. This consists in the

use of flesh to moderation, not oftener than once a day, and that at the dinner meal. I will now proceed to give some directions in regard to

FOOD.

Dr. John King, in his work offered to the public in 1860, I believe, entitled the "New American Family Physician," has given some excellent rules on the subject of food, from which I take the liberty to quote: "Food or aliment is necessary for the existence of all organized beings, but the requisite quantity and quality depends very much upon the circumstances connected with each individual case. Thus some live entirely upon a vegetable diet and enjoy excellent health, while with others a portion of animal food is actually necessary." When I was a young man, says Dr. John King, "I followed a strictly vegetable diet for three years, at which time I became attacked with a scorbutic disease which resisted the various remedies prescribed for its removal; by the advice of an old physician I resumed the use of animal food, and the disease left me in a few weeks. I have met with many other individuals upon whom a strictly vegetable diet exerted similar influences."

GENERAL RULES FOR DIET

Are all that can be given, each individual must make an application of them to himself; for it will be found that many articles viewed and recommended as healthy and nutritious will produce with some persons much distress, while others can use them with benefit; that one stomach will bear almost any thing with impunity, while with another great care must be observed in selecting suitable food for it to digest. Hence the necessity of every person being thoroughly acquainted with his own peculiarities in this respect.

An author justly remarks: "Almost any common food is wholesome to a temperate man who preserves his body and his mind in an active, but not hurried, state; for thus he ventilates and purifies his blood, and brings every fibre of his frame into the best condition for the proper enjoyment and use of life. It is astonishing how much the health is often improved by thinking nothing about it, but just going about one's business, and using the common means of subsistence, under the guidance of common sense and a good conscience. But mere ignorance can not do this, and we must be able to consider before we can reasonably do our duty. Even savages have their rules of health, and no one has ever reached a hale old age without due attention to exercise, air, temperature, rest and diet. Although the dieting of soldiers and sailors may prove what is the average requirement in respect to food by persons laboriously employed, yet this average itself indicates that nature is very accommodating or such a variety of constitutions could not all be treated in the same manner. Positive rules for the direction of appetite are not consistent with nature, and every one who possesses reason will ordinarily find a better guide in his own discretion and good sense than in any dietary that the doctors can direct."

In partaking of food much will depend upon the appetite; if this be healthy or natural, a proper amount of aliment will refresh and invigorate the system; if it be artificial, that is, excited by stimulants of various kinds, not only will the stomach be seriously injured, but irreparable mischief will frequently be done to the system. Some persons form an appetite of habit, that is, accustoming themselves to eat at certain hours, whether the food is required or not, and often without any relish for it; such individuals, as well as those who take

food without an appetite, are very apt to be complaining that "food does not seem to do them any good," as well as to be laboring under a host of disagreeable symptoms, which speedily destroy health and life.

Food taken into the stomach from an artificial appetite is always imperfectly digested, and must, as an inevitable consequence, produce diarrhea, if such a course is persisted in; for as soon as the influence of the stimulus has passed the stomach returns to its original torpid condition, and instead of the food being digested, it decomposes and putrifies, and passes out of the stomach in a condition to create disease and shorten life. I have observed among my own acquaintances that of those who were in the habit of provoking their appetites by stimulants the great majority did not live to see the prime of manhood, and I have no doubt but this will be found to be true generally. When an individual has no desire for food it is always better not to eat, because an abstinence for a certain period, if not of too long duration, will cause a return of the natural appetite; yet invalids who have no appetite frequently eat, not that they desire food, but because it is the regular hour for meals, and in this manner they perpetuate the want of appetite and increase the severity and obstinacy of their afflictions. It is much better to pass one, two, or even twelve meals than to injure the stomach, and consequently the whole system, by forcing food into it when it is neither craved nor relished. Occasionally the functions of the digestive organs may become so torpid that the mere abstinence from food will not restore them to a healthful activity, and should the person wait for a return of his appetite serious and permanent mischief might be the consequence. However, in nearly all such cases an attention to the functions of the skin and to exercise in the open air, with regularity in sleep and proper medication, will arouse a sufficient degree of digestive energy for the purposes of animal existence, and which, when developed, may be still further improved by a careful observance of the quality and quantity of the food, as well as of its proper mastication. Very rarely, indeed, is it necessary to provoke an appetite by stimulating the coats of the stomach to a transitory activity, and he who is guilty of such a transgression must not expect to live half of his days.

THE QUANTITY OF FOOD TO BE TAKEN AT A MEAL

Depends entirely upon circumstances; generally individuals eat nearly twice as much as is necessary for the requirements of the system. Laboring persons require more food than those of sedentary professions. But this must be regulated by the age, the amount of exercise, the wear and tear of the body, and the character of the climate, as well as by the composition and digestibility of the food.

On an average, a healthy adult, in a temperate climate, who takes moderate exercise daily, may use from twenty-five to thirty-five ounces of solid food per day; if the temperature of his location is considerably elevated, much less will suffice; and if it be considerably diminished, more will be required. As a general rule, the proper quantity of food to be taken at one meal can be better determined by the feelings of the person than by any specific formula, provided it be eaten slowly and with due attention to its thorough mastication. By this I do not mean that individuals should abuse their stomachs and eat to satiety, as this is extremely improper and unhealthy, but that when a sensation of ease, satisfaction and mental and physical quietude is felt, enough has

been received into the stomach. It were generally better for all persons to rise from the table with an appetite. having eaten just sufficient to avoid a definite feeling of satisfaction; and the necessary quantity may be ascertained in a short time by each one observing for several meals what amount of food it requires to produce the above named effect in his particular case. The same rule holds good with patients laboring under chronic disease, but without loss of appetite. Fever patients. and others whose appetites are diminished, should never eat largely nor produce an artificial appetite by any means whatever. It may at first be a severe tax to rise from the table not fully satisfied with what has been eaten, but custom will soon make it easy; and whoever pursues this course will be fully repaid for his forbearance by a freedom from those discomforts and unpleasant sensations so frequently following the full indulgence of the appetite.

TWO MEALS A DAY,

With a moderate refreshment between, are sufficient for health; but they never should exceed three.

BREAKFAST,

As a general rule, should be taken soon after rising and dressing, except in those cases where an early breakfast disagrees and where active exercise before the morning meal appears to benefit the individual.

Children are frequently injured by working them or sending them to school before they have eaten breakfast; and the danger of infection from contagious disorders, epidemic causes, &c., is greatly enhanced by an exposure to their influence before breakfast. This should be of vegetables entirely, using no animal diet at all, and, generally speaking, it may be a full, healthy meal, more particularly among laboring people.

THE DINNER

Should be taken about six hours after breakfast, though many persons who eat only two meals per day enjoy excellent health by having an interval of eight or ten hours between them. The stomach can easily be made to adapt its wants in this respect to any reasonable length of intervals by attention and cultivation for a few weeks. With hard working men the dinner may be composed of an equal amount of vegetable and animal food, while with the sedentary animal diet should be eaten sparingly, and only once or twice a week. A moderate amount of fish, soft boiled eggs, or oysters, may be substituted for the animal diet with benefit in all cases where they agree with the system. This meal, with a hard working person, should be a full one.

SUPPER

Is generally an unnecessary meal, and those who can dispense with it will find it an advantage to health and to refreshing sleep. Yet those who dine very early, or who exercise actively, may find it necessary to take a light vegetable meal at the close of the day, in order to allay hunger and dispose to sleep. Supper should be light, and ought always to be taken two or three hours before retiring for the night, otherwise it will be very apt to prevent sleep, or occasion unrefreshing sleep, accompanied with disagreeable dreams.

THE HABIT OF TAKING A LUNCH OR LUNCHEON

Between meals is a most pernicious one, particularly to persons not engaged in active exercise. However, the most sedentary sometimes experience a desire for food between their ordinary meals, occasioned frequently by a little more exercise than is usual with them; laboring people may also require a lunch, especially when extraordinary labor and the depressing influence of heat produce a sense of fatigue or debility with hunger. In all these cases the use of ripe fruits will be found more beneficial than any other article that can be used. But no person should provoke an appetite of habit for any species of food by eating between meals when the stomach does not call for it, because, if persisted in, it will give rise to some form of disease.

THE TAVERN LUNCH,

Assisted as it usually is by one or more draughts of intoxicating liquors, is a most dangerous custom, being equally destructive to both the physical and moral health of those who engage in it.

Although it is utterly impossible to sustain life upon any single alimentary substance, no matter how nutritive it may be, it is by no means proper that a great variety of food should be taken at one meal. Such a course interferes with the function of digestion, and will ultimately give rise to disease. The fewer the articles of diet used at any meal the better will it be for the health of the persons and the normal condition of the stomach. An excess of food at any time causes giddiness, lassitude, uneasiness, distention of the stomach and drowsiness, and if persisted in will ultimately destroy health and life. And when a person experiences any of these sensations he is thereby warned that he has eaten too much. Those who are disposed to apoplexy should eat a nourishing, digestible diet, but always in moderation, and on no account should they permit themselves to sleep soon

after a meal, particularly if it has been a full one, on account of the tendency at this time to an attack of the disease.

THE QUALITY OF THE FOOD

Is a very important consideration. Man is undoubtedly an omnivorous animal, and requires both animal and vegetable food, the first of which yields a much larger amount of nourishment than the latter; but it must not be forgotten that a too highly nutritive diet is as detrimental to health and longevity as that which contains an insufficient quantity of nutriment. Consequently it is better to use animal diet in proportion to the quantity of vegetables which is consumed, according to the requirements of the constitution.

Vegetables require a longer period for digestion than animal food, and are, likewise, more apt to produce acidity and flatulency; those, however, which are cooked usually digest the more readily, though in this form they are not always adapted to the nutrition of the system, from the fact that the application of heat more or less completely destroys their organization. Animal food digests more readily than vegetable; and, though the flesh of young animals is more tender and soluble than that of the adult animal, yet it is frequently less digestible. For instance, it is well known that beef and mutton are more readily digested and are more healthful than veal and lamb. Yet vegetable diet affords as much nourishment to the system as animal, and without occasioning as much stimulation, heat, or repletion of the blood vessels; and, as a general rule, those who use animal food sparingly have a better appearance, more strength and more cheerful spirits than those who partake largely of it; their muscles are, likewise, firmer and more plump, and their skin more clear and free from disease. Animal diet increases the action of the heart and arteries during digestion, renders the blood thicker, richer, and more stimulating, and causes a greater tendency to inflammatory and other forms of disease, than one of a vegetable character.

In relation to the kind of food best adapted for use, each individual should observe what articles agree best with his stomach, for it is frequently the case that an article which would be perfectly proper and quite healthful for one class of persons would produce much derangement in others. Again, the inhabitants of one climate will, on account of the excessive heat or cold. require directly opposite kinds of food to maintain health and support life. Thus, the natives of Greenland could not exist unless they largely used oil and fat meats, which cause a large quantity of carbon to be formed in the system, and the combustion of which, by the oxygen of the air, produces a great degree of heat, sufficient to enable the system to resist the intense coldness of their climate. Again, in tropical climates, and in temperate latitudes during the hot season, the system requires a smaller quantity of food, and of less carbonaceous quality, because the air being expanded less oxygen is inhaled at each inspiration than in cold climates; and when the inhabitants of warm countries consume large quantities of food an excess of carbonaceous matter is produced in the system, which not being destroyed by the oxygen of the air, engenders disease of the liver, bilious fevers, &c. On the contrary, a deficiency of carbonaceous food in cold countries, or in cold seasons, when there is an excess of oxygen, diminishes the animal temperature and gives rise to pulmonic diseases.

There is one thing, however, which I may state here,

and that is, that many vegetables are rich in carbon, containing it, probably, more largely than animal flesh; and, no doubt, a diet from such vegetables would be more beneficial to even those residing in cold countries than the excess of animal food so commonly used. Intellectual activity is very much diminished by an excessive use of flesh, while, on the contrary, those who eat sparingly of it, have a greater degree of intellectual and moral power. This fact may be readily ascertained by comparing meat-eating nations with those whose fare is principally derived from the vegetable kingdom.

CHILDREN REQUIRE LESS ANIMAL FOOD.

Children require much less animal food than adults, and females than males, and whatever may be the custom or business of an individual, the quantity of animal food should be greatly diminished in warm weather; indeed, for the sedentary, and those of full habit, it were better to eschew meat entirely during the hot months of the year. In cold weather a more stimulating and persistent nourishment is needed than in summer, and a certain amount of animal food will generally be of benefit, more especially to those of active laboring habits.

There is no doubt but an excess of animal diet vitiates the fluids of the system; and you most commonly find that those who are laboring under "humors," as scrofula, cancer, cutaneous diseases, &c., are either great flesh eaters themselves, or their immediate predecessors were. Animals are as liable to disease as human, beings, and however apparently pure their flesh may be, a tendency to disease is imparted to those who consume it. But when the animal itself is diseased, by the pernicious habit of stall feeding to fit it for our markets, or by a forced driving from country pastures, the deleterious

consequences arising from the use of their flesh as food must be, as it is evident to every discerning mind, of a serious character. Large flesh-eaters, and especially those in country places where pork in some form is eaten at every meal, are very liable to epidemic and malignant diseases; and thousands have died of typhoid, bilious and congestive fevers, of dysentery, of cholera, small pox, &c., who might have been saved if their systems had not been vitiated by the gross character of their food. Among children, those who are the greatest flesheaters are subject to worms, diarrhea, &c.

CONDIMENTS

Should generally be avoided, because they generally over-stimulate the stomach, causing an artificial demand for more food than is necessary, and a repetition of which must ultimately weaken, if not actually disease, that organ. The plainer and simpler the diet the greater will be the mental and physical health and strength. Hence persons who are constantly indulging in highseasoned food, rich puddings and pastry, mince pies, plum puddings, plum cake, hot bread, &c., are as constantly suffering from some kind of affliction, for which they are obliged to be almost constantly under the physician's care. It is not necessary, however, that food should be unpalatable, because if this be the case the stomach will refuse it; it should be plain, nutritious and palatable, and sufficient should be eaten to prevent the system from becoming debilitated. In speaking of the various articles of diet separately, a few pages beyond, further reference will be made to the above points.

THE MANNER OF EATING

Is by no means a trifling consideration; it is as important

to health and proper digestion as attention to the quantity and quality of the food. But to witness the major portion of American meals, and especially at public places, one would suppose that it was a matter of no interest how food was eaten so it became safely lodged in the stomach. A stranger to the habits of this country, on witnessing a meal on a steamboat or at a hotel, would be led to believe either that the partakers thereof were eating on a wager, and that the first one from the table would be winner, or that the meal was so obnoxious a task that every one endeavored to hasten through it as rapidly as possible, pouring soup, fish, meats, custards, pies, liquor, nuts, oranges, raisins, &c., into the stomach en masse, without regard to quantity or their preparation for the digestive organs. No wonder that headaches, dyspepsia, consumption, hepatic affections and premature old age are so common among us; and especially when we consider that the destructive influence of such a course are most generally aided by a want of exercise, various dissipations, &c.

For at least half an hour previous to a meal, and an hour after, more especially with the dinner, our principal meal, active bodily and mental exercise should be avoided as much as possible; thus, running, long and hurried walking, protracted speaking or singing, serious or active study or thought, &c., are exceedingly improper at such times. The individual should endeavor to compose his system, and thus prepare his stomach for the meal, and maintain this state of quietude for about an hour after finishing the meal, in order not to interfere with the digestive action. Such a course will permit the stomach to properly digest the food, prevent disease, impart strength and nourishment, and entirely obviate a tendency to dyspepsia.

DURING A MEAL

Little or no fluid should be drank, as it distends the stomach, dilutes the gastric juice, impairing its digestive solvency, and thereby increasing a disposition to gastric affections. Observe animals in this respect—they never eat and drink at the same time. When drink is taken during or soon after a meal it should not be too cold nor too hot, but moderately warm; because, heat being necessary to digestion, the cold beverage arrests the digestive process, causes the food to remain undigested in the stomach, often for several hours, thus producing dyspepsia, obstructions, &c.; and if the drink be too hot, the stomach is too much stimulated, from which reaction takes place, resulting in debility and loss of action of the organs concerned in the functions of digestion.

POWERFUL MENTAL EXCITEMENT

Should be avoided immediately previous to, during, or for some time after a meal, especially anger. Many a person disposed to apoplexy, epilepsy, or other form of disease, has brought on a fatal attack by eating immediately after some intense excitement of the mind, and even by becoming angry after a temperate meal. Sexual cohabitation after a meal is frequently indulged in; this is exceedingly pernicious, and though in the young adult it may be practiced with impunity, it will certainly and invariably give rise to some permanent and serious disease if persisted in.

A meal should always be made a mental and physical relaxation instead of the gloomy, melancholy and hurriedly anxious appearance of our mysteriously taciturn eaters, who at a meal resemble criminals instead of honest, intelligent individuals. Cheerfulness and sociability should prevail; conversation of a light,

interesting character should be indulged in, so that all, even to children, at the table may participate. The meal should be consumed leisurely, without hurry or any unpleasant, constrained feelings, each one endeavoring to render his neighbors happy and cheerful, and thus secure these same feelings for himself. At least half an hour should be devoted to a meal. Money-worshipers may despise this remark, but the day for regret and suffering from an inattention to these rules is certain to come. Let all who value health and happiness be strictly observant in these matters. How many are there who have gained riches at the expense of health, and instead of enjoying their possessions are rapidly parting with them to the physician, &c., in the vain endeavor to regain former health and strength? To destroy the constitution in the desire to amass a fortune, and then to dispense with this fortune that the system may be restored to its former condition, seems to me folly in the extreme. A life so passed is truly a mis-spent one.

FOOD MUST ALWAYS BE WELL MASTICATED

Before it is swallowed, the finer the better; and the act of chewing or masticating, instead of being rapid, as is too often the case, should be performed with care and moderation, taking ample time to perfect the complete mastication of the food, thereby inviting a flow of saliva to the mouth, which, by mixing with the food, assists in its thorough digestion in the stomach, and, at the same time, prevents us from putting into the stomach more food than is really required for health. Fast eaters seldom masticate their food sufficiently, hence they not only throw into the stomach a quantity of solid matter not fitted and prepared for the digestive powers, but from the rapidity with which it is "bolted down" the

stomach does not begin to fully realize its presence until too much has been received into it, and dyspepsia must undoubtedly be the result.

Parents are inflicting a serious injury upon their children by urging them to eat fast. Indeed, a great part of the dyspepsia of adult age may be traced to the endeavor of the child to obey that too frequently repeated command, "Make haste, eat faster; I am in a hurry, and don't want the table to stand here all day."

MODE OF PREPARATION OF FOOD.

Those articles of food, such, for instance, as meats, amylaceous substances, &c., which are not eaten until cooked are generally prepared to suit the taste of persons either by boiling, roasting, broiling, baking, stewing or frying; and as there is an essential difference in the digestibility and nutritive character of the same article when differently prepared, a few remarks on the several modes of cooking will be proper.

The preparation of food demands as much attention as its selection, because the most nutritious and appropriate articles may be rendered innutritious and indigestible by an improper method of cooking. Food should not be decomposed by cooking, but merely disintegrated, so as to facilitate its decomposition and digestion in the stomach; too much or too long-continued heat decomposes animal substances, impairs their nutritive principles and renders them unfit for diet. So also does the preservation of them by artificial means, as salting, smoking and pickling; either of these means tend more or less to impair the digestibility of animal flesh, by increasing the hardness of its texture and combining with it some foreign substance which can not be separated from it in cooking. Perhaps the best and

least objectionable mode of preserving fish, meat and fruit is by sugar. It has the advantage over salt in not rendering meat less savory nor less nutritive, and in preventing putrefaction with a much smaller quantity. Pyroligenous acid is likewise an useful preventive. Meat and fish dipped in it for a few minutes may be preserved for months without having their virtues injured and without being attacked by insects. When this acid is used the substances should be confined, so as to prevent evaporation, otherwise, if exposed for a length of time in the open air, the acid evaporates and decomposition ensues from the action of the atmosphere.

BOILING

Is probably the most eligible mode of cooking; it softens the animal fiber, renders it more pulpy, and thus enables it to be more readily and effectually acted upon by the juices of the stomach. It undoubtedly decomposes some parts of the meat, depriving it of a portion of its nutritive properties, solidifying the albumen and changing the gelatin into a glutinous matter; but still it does not alter the relation of the elements in meat as to materially diminish its nutritious qualities. Much, however, depends on the manner in which the process is conducted: if the boiling be too quick, the albuminous matter of the meat is coagulated, the outside of the flesh is rendered hard, while the interior is not sufficiently done, and the digestibility of the meat is much diminished. If the boiling be too slow or too long-continued, a hard and indigestible substance may be obtained; or if this be not the case, the nutritive quality of the meat will be considerably lessened. The best method of boiling meat so as to preserve its juices, secure its tenderness and not materially diminish its nutrient qualities, is to first boil

the water briskly, then introduce the meat, continue the boiling for a few minutes and then diminish the temperature of the water to 168° or 170° by adding sufficient cold water, so as to keep the fluid in that state which approaches more to simmering than boiling, at which temperature it may be kept for two or three hours. In this way all meat, except poultry, should be prepared for invalids and dyspeptics.

Beef, mutton and other matured animal meats are always more tender and juicy when boiled in hard water, because a layer of coagulated albumen is more readily produced on their surfaces, preventing the escape of their juices. On the contrary, fish should always be boiled in soft water, as their firmness and consequent indigestibility is proportioned to the hardness of the water. Soups, broths and jellies require soft water.

BOILING DISSOLVES THE CELL WALLS

Of vegetable substances, deprives them of a quantity of air, and renders them more soluble in the stomach. Long simmering is preferable to boiling, so that they may be perfectly softened throughout, but in no part quite dissolved. Rain or soft water, with a little salt, is better adapted to vegetables, such as potatoes, cabbage, greens, corn, turnips, cauliflower, peas, &c., and these always require a long boiling, because they are rendered indigestible and highly injurious when boiled too little. Potatoes are most nutritious and digestible when boiled so as to be neither waxy nor mealy, but so softened as to be readily mashed. Over-boiling lessens their nutritive quality.

ROASTING IS THE NEXT BEST

Method of cooking. By this process flesh is deprived of part of its water, its fat is liquefied, partially escaping,

its albumen is coagulated and its fibrin corrugated. As the roasting proceeds the surface of the substance acted upon becomes gradually darker colored, and finally scorched, and its tendinous portions are rendered viscid and tender. Meats when roasted should not be underdone nor overdone. The popular idea is that when underdone they are more nourishing, but this is an error; besides, underdone roasted meats are less digestible and consequently less nutritious than when well done. Boiling extracts the gelatin of flesh, while roasting does not. By boiling beef loses one-fourth of its weight and mutton one-fifth, but by roasting they lose one-third. The starch grains of vegetables are rendered more or less soluble by roasting, and thus many of them are rendered more digestible and nutritive than they would be in a raw state. Vegetable albumen is coagulated by roasting.

BROILING

Produces changes in meat similar to those caused by roasting, but the process is more rapid. The outside surface becomes suddenly brown or hardened, preventing the internal juices from evaporating, so that the meat is rendered peculiarly tender and more savory than when roasted. For dyspeptics and those of delicate stomachs broiled meats are not as well fitted as when boiled.

BAKING,

When mismanaged and not attended to, is a very objectionable mode of cooking meats, and has, probably, from this cause created some prejudice against it; but when properly managed it is the most economical, the least troublesome and the most useful method of preparing nearly every kind of food. Most usually too much heat is employed, which decomposes the fat and produces a disagreeable and injurious empyreuma, which renders

the meat unpalatable and indigestible. But if the heat be properly regulated, and especially if the substance baking be slightly covered so as to prevent scorching and drying, the meat will be rendered tender and juicy, of the flavor of roast, having its nutritious particles preserved, and without any decomposition and waste. Baked meat pies, and particularly when the pastry is rich with butter, are more difficult of digestion than meat baked without any pastry. Dyspeptics, and those whose stomachs are weak, should avoid all baked food, except it be light, amylaceous puddings, made of arrow root, sago, tapioca, rice, &c.

STEWING IS OBJECTIONABLE.

It deprives the meat of much of its juices, and decomposes, in a greater or less degree, the fatty and gelatinous portions.

The fluid in which meat is stewed contains a great part of its nutritious elements, but, being too fluid, they can not be digested until their watery parts have been absorbed by the stomach. Stews are not adapted as food for the sedentary and dyspeptic, and if they be habitually partaken of they will eventually produce painful and dangerous symptoms of disease. They are rendered still more indigestible and unfit for the stomach when various spices, butter, wine, or other stimulating ingredients, are added to improve their flavor.

FRYING IS THE MOST OBJECTIONABLE

Of all the modes of cooking. The heat is applied to the meat through the medium of boiling fat or oil, which is rendered extremely indigestible and objectionable to the stomach on account of the chemical changes which are thereby effected. Invalids, convalescents and dyspeptics should never eat fries, as eggs, oysters, pancakes, omelettes, fritters, fried fish, liver, pork, beef, mutton, &c.

ARTICLES OF ANIMAL DIET.

MEATS, POULTRY, FISH, EGGS, MILK, BUTTER.

The articles from which food is prepared are various, whether derived from the animal or vegetable kingdom, and as some of them are preferable to others on account of their being more readily digested and their different nutritive powers, a brief reference to them will be necessary. I will commence with those from the animal kingdom, first observing that dark colored meat is usually more digestible and nourishing than the white meat of animals, on account of its containing a greater amount of fibrin; and the same may be said of the flesh of animals which are permitted to roam unrestrainedly in the open air when compared with that of stall-fed beasts. Again, the meat of hunted animals is tenderer and more digestible than those which are killed without any previous exercise. The flesh of the female animal is almost always more savory than that of the male, while that of a castrated or spaved animal is still more so. All meats have their digestibility as well as nutrient qualities impaired by salting and smoking. Hence, although salted meats may be eaten by healthy persons of active habits, yet, as a general rule, they are unfit for convalescents, dyspeptics, and those of sedentary occupations.

BEEF

Is a very healthy, nutritious and easily digested meat; it should be soft, pliable, fat, and taken from an animal

neither too young nor too old, and perfectly free from disease. Its fat part is not so easily digested as its lean; hence the great accumulation of fat upon *prize beef* does not contribute any to its value, though unless some fat be present the lean part is not so apt to be juicy and tender. The tongue, as well as the tripe, are not so easily digested as other parts, and are, therefore, not proper food for dyspeptics and those having weak stomachs. Properly corn-fed animals, that have had plenty of exercise in the open air, furnish the most healthy and delicious meat.

The best mode of cooking beef is by boiling or roasting, though beefsteaks are by no means indigestible when properly managed. To be wholesome beef must not be too much done nor underdone. As an article of diet for convalescent persons, it is best prepared in the form of beef tea, which should be made as follows: Cut half a pound of the lean part of a good rumpsteak into thin slices, put these in a dish, sprinkle a little salt over them, and pour on them a pint of boiling water, cover the dish with a plate, and set it over a very gentle fire, that it may steep, not boil, for an hour; then put the whole into a pan, cover it, and allow it to boil for fifteen minutes; after which strain off the fluid from the meat through a fine seive or napkin. If this tea be too strong, it can be reduced by the addition of boiling water.

Generally the firmer texture of beef renders it less readily digested than mutton, on which account this latter is the preferable meat for convalescents.

DRIED OR SMOKED BEEF

Forms a palatable and wholesome relish for healthy stomachs, but the meat having been impaired in its digestibility by drying, salting and smoking, it is not adapted to the weakly and dyspeptic. The density of fibre of every kind of animal food is very much lessened by keeling it for a certain length of time before cooking, which is owing to an incipient decomposition having ensued; but great care should be taken not to allow this process to advance so far as to taint the meat in the slightest degree, for it would be very apt to give rise to disease or, in convalescents, cause a relapse.

MUTTON

Is probably more easily digested than any other animal food, being at the same time highly nourishing and healthy. The flesh of the castrated animal, or wether mutton, is by far more palatable and more digestible than that of the male animal; this last is coarse, and so unsavory that many persons can not eat it at all. Ewe mutton is also preferable to the male, if the animal is not above three years old. For convalescents, dyspeptics and persons of weak stomachs, there is no meat so wholesome and digestible as wether mutton: it is best cooked by boiling. A mutton tea may be prepared for invalids as follows: Cut half a pound of the lean part of good mutton into thin slices, put these into a dish, with a pint of boiling, soft water, cover the dish with a plate and set it over a very gentle fire, that it may steep for an hour; then put the whole into a pan, cover it, and allow it to boil for half an hour; after which strain off the fluid through a fine seive or napkin. If it is desired to add barley to this, an ounce of pearl barley, previously washed and macerated in boiling water for an hour, may be boiled with the mutton tea-separating the barley by straining. From the tendency of sheep to disease, care must be taken never to eat the meat of a diseased animal.

VENISON

Is a nourishing, palatable, healthful and easily digested meat, and from the fact that the deer is usually killed in chase its flesh, like most varieties of game, is more tender than that of the domestic animals killed in the ordinary way, and by some is considered a greater delicacy.

PORK

Is usually considered a savory, nutritious meat; not so digestible, however, nor even so healthful as beef or mutton. I consider it a very unwholesome meat, notwithstanding its extensive preparation and use in this country, because, in adition to its greater indigestibility, it is almost always diseased. There is hardly a hog fattened for the market but what labors under a measly condition, or a tuberculous affection of the liver or kidneys, or perhaps both, as well as of other organs; and it is no uncommon thing for people eating pork to cut or bite into hardened tubercles in various parts of the lean and especially of the fat of the meat. Surely the meat of a diseased animal can not be healthy, and yet this diseased meat forms the principal part of the diet of an immense portion of our population. No wonder that diseases of the skin, scrofula, cancer, disordered digestive organs, &c., are so common in those sections of the country where it is so constantly eaten, or that epidemics, as dysenteries, typhoid fevers, &c., prove so fatal, when they occur among a class of people whose principal diet is pork in some form, but more generally that of bacon. I have seen persons cut into a piece of pork containing tubercles and actually eat it, even after having been told it was diseased, so great was their reverence for pork. I have no doubt but that with many persons

the use of whisky, peach brandy, apple brandy or other alcoholic drinks lessens the immediate effects of the influence of pork upon their systems, for it is a well ascertained fact that these liquors will prevent or suspend the activity of tuberculous affections for a long time, frequently effecting apparent cures. But then the remedy is by far a greater evil than the pork eating; it were much better to use neither. Bestow the same attention upon raising beef and mutton and it will give better results, both as regards health and pecuniary profit.

Even when the flesh of pork is healthy it is not so wholesome and digestible as other meats, being better adapted to those whose stomachs are healthy and strong and whose occupations are active and laborious; and in all cases its long continued use will invariably give rise to disease sooner or later in life. And as many will continue to use it, notwithstanding its unwholesomeness, a few remarks may be made in reference to its several modes of preparation. Pork should never be eaten by dyspeptics, by those of sedentary habits, nor by those inclined to corpulency or who are liable to affections of the skin, scrofula or other tuberculous forms of disease. The flesh of the sucking pig or shoat is considered a dainty relish by some, but it is much less digestible than the matured meat, and frequently affects the bowels in a violent manner.

BACON.

When the sides and flanks of a full grown hog are salted and dried (and frequently smoked), it is called bacon. It is a strong, exciting article of food, hard to digest and fit only for robust persons who work hard. The best method of cooking it is to boil with vegetables; when fried, with or without eggs, it is unhealthy and not fit to eat.

When the thigh or ham of the hog is salted and smoked it forms ham, a stimulating food fit only for laborious persons, and which, on account of its difficult digestibility, frequently disagrees with many. It proves wholesome only to those with whom it agrees. It is best cooked by boiling; when fried it is rendered very indigestible, and should not be eaten by dyspeptics and persons of sedentary occupations.

SAUSAGES

May be prepared from the boiled flesh of several animals—in this country they are principally made from pork. The meat is made fine, seasoned with salt, pepper and spices, and is eaten in that state, or more commonly dried and smoked. They are a very indigestible article of diet, being scarcely fit for the stomach of the robust and hardy, and they should be especially rejected by the sedentary and dyspeptic. When exposed for any length of time to dampness they are liable to experience certain chemical changes which render them poisonous.

The name *scrofula* had its origin in the well known fact that it was a disease peculiar to swine. The analysis of the blood of scrofulous subjects shows that it differs materially from that of healthy individuals. In the former there is an excess of serum and a deficiency of albumen and fibrin. Hence the solids formed from this blood are feeble, lax and incapable of resisting exposure, fatigue and disease. It is true that for the most part scrofula is hereditary, still there are many well-marked cases of the acquired disease from the use of pork.

VEAL,

Or the flesh of the calf, is not so digestible as beef; it contains a large amount of gelatinous substance, as is the case with the meat of all young animals. The best mode of cooking is by roasting or baking. Broth made from veal generally produces a laxative influence on the bowels, and may be used with advantage by persons subject to constipation. A tea of veal, made in the same manner as beef-tea, from a fillet or knuckle of veal, is sometimes of advantage to the invalid.

LAMB

Is a wholesome diet for persons in health. It is less stimulating and less solid than mutton, but is not so digestible. It may be used by convalescents, but not by dyspeptics and persons laboring under affections of the stomach, with whom it will generally be found to disagree. A lamb should not be killed too young for diet; at the age of from five to seven months is preferable to an earlier period.

SALTED MEATS,

As before observed, are less nutritious and harder to digest than fresh meats. They should always be thoroughly boiled and eaten with a good proportion of vegetable food. The *fat* of meats is very nutritious and requires strong digestive powers, hence it is not so suitable for the sedentary, dyspeptics and persons of weak stomachs; when eaten it should always be with at least an equal amount of lean meat and some bread, rice, potatoes or other farinaceous article of diet. Too much fat causes uneasiness, weight, oppression, eructations and affections of the digestive apparatus. It is positively unhealthy when fried or roasted, and should never be allowed to children and invalids in any form.

GAME, OR BIRDS AND BEASTS

Living in a natural state, and which are killed in this condition, are in general more healthful when cooked in

a plain manner than the same animals when tamed and killed in the usual mode.

POULTRY,

By which is generally meant all farm-yard birds, as chickens, hens, ducks, turkeys, &c., are generally very digestible and healthy food for persons having stomachs free from disease. Chickens and turkeys are considered the most easy of digestion if not too richly seasoned, and geese and ducks are less digestible and more stimulating, usually being injurious to dyspeptics and persons whose digestive powers are not very strong. The dressing usually employed when baking or roasting these birds is extremely stimulating and indigestible on account of the fat and spices mixed therewith.

CHICKEN SOUP is a light, nourishing diet and may be used by many sick persons and convalescents. It is best when made from lean portions of the chicken, which should be boiled in water to which a little salt has been added, and as the fat scum arises it should be removed. Crackers, rice, barley or toast bread may be added to it to increase its nutritiveness if desired and not contraindicated. When highly seasoned with spices it becomes an improper diet, especially for dyspeptics and convalescents.

FISH

Furnishes an almost endless variety of food for man, and in some countries, especially in the northern parts of the two continents where vegetation is scarce, they form the principal diet of the inhabitants. However, they are not so nourishing as the meat of warm-blooded animals, but are sufficiently so to support health and strength. With many stomachs fish meat is difficult to digest, and when it is eaten habitually it frequently induces disease of the

bowels and of the skin. Some individuals are very apt to be affected by eating certain kinds of fish, experiencing a disagreeable, uneasy sensation at the stomach, a small amount of fever and an eruption on the surface of the body; these symptoms are also produced occasionally in deranged conditions of the digestive apparatus. All kinds of fish, when out of season, are of difficult digestion and very unhealthy, and in some situations they become poisonous. Salt water fish are always better than those living in fresh water, as they possess a firmer and more pulpable flesh which is less liable to putridity and is less clammy or slimy. Many persons can not eat fresh water fish at all without inducing an attack of cholera morbus or other difficulty. Fishes having scales are usually more digestible than others; thus the cod, shad, trout, perch, fresh herring, plaice, flounder, turbot, whiting, &c., are the most healthy and nutritious, while eels, skate, sturgeon, mackerel, salmon, &c., are much less digestible and wholesome. Indeed all fish which abound in oil are stimulating and difficult of digestion.

Fish are best cooked by boiling; when fried or stewed they are rendered quite indigestible. Butter should not be used as a sauce for fish nor the acid fruits or jellies, as they almost always produce heaviness or uneasiness of the stomach. Milk is a very improper article to be used at the same time with fish, frequently inducing severe diarrhea, cholera morbus, &c. When fish are dried and salted they become less nutritious and digestible, and should never be eaten except by the healthy and hard working, and even by them should be used very sparingly.

OYSTERS

Furnish a delicious and favorite food; when raw or but slightly cooked they are light, nourishing and easy of digestion, with the exception of the eye or tough white part, which should never be eaten. When well cooked, as by stewing or frying, the albumen is coagulated and hardened and the fibrin is corrugated, when they become quite indigestible and should not be eaten. Salt water oysters are always better than those found or propagated in rivers. Oyster juice thickened with cracker in powder and warmed is frequently a wholesome and nutritious diet for persons having weak stomachs and convalescents. With some constitutions oysters disagree, and they frequently prove injurious when eaten out of season.

SOUPS,

As ordinarily prepared from beef, mutton or veal, with the addition of various vegetables, are a very healthy. nutritious and inexpensive diet. The meat as well as the vegetables should be thoroughly boiled, and too much seasoning should be avoided. They may be improved by the addition of rice or barley, stale bread, toast bread, and will digest more readily when eaten with bread, because liquid food is apt to swell out the stomach and render a greater action of the organ necessary for its perfect digestion. Solid aliments are, however, the best suited for weak stomachs and dyspeptics. The addition of dumplings to soups or excess of spices, wine, &c., are very improper, as they tend to provoke the appetite, by which a greater quantity of food is eaten than is required, besides which they are rendered highly indigestible; and if a course of this kind is persisted in the stomach will certainly become diseased. When meat has been boiled for a long time in water, to which a small quantity of salt has been added, it is termed broth. This eaten with bread affords considerable nourishment without unduly stimulating the digestive apparatus or augmenting the heat of the body.

EGGS,

When fresh and lightly cooked, are nutritive and moderately easy of digestion. The white of the egg is principally composed of albumen, while the yelk contains in addition to it a yellow oil. When the albumen is coagulated or hardened by heat it is not thereby rendered indigestible, but the yelk is. Although hard-boiled eggs are, as a general rule, difficult of digestion, yet they are sometimes found to agree with certain persons better than when in a soft state. Vinegar is said to facilitate the digestibility of a hard-cooked egg. All articles in which eggs are cooked by frying, as omelettes, pancakes, fritters, &c., are hurtful to delicate stomachs. When an egg is whipped up with wine and sugar it forms a valuable restorative and stimulant.

MILK,

When obtained from a healthy, well-fed animal, is very nutritious and wholesome, and is more advantageous in its raw state than when boiled. In combination with bread, rice, sugar, egg, &c., it ought to form the chief portion of the diet of children until they are ten or twelve years of age; and those who are thus fed will be found stronger and more healthy and vigorous than those who are allowed to live upon meat, pies, cakes and other delicacies of the culinary art. It is a preferable drink to tea, coffee, liquors, &c., and may be used pure or considerably diluted with water. A glass of milk and water with a teaspoonful of salt added is said to be the best refreshment that a fatigued or famished person can take. One part of lime water added to two or three parts of milk is useful to check obstinate vomiting and to allay irritability of the stomach, especially when connected with acidity, as in consumption and other debilitating diseases. Milk sometimes disagrees with adults, probably owing to its oily constituent—butter. It is very unfortunate for the inhabitants of large cities that no regulations can be adopted by which they may be certain of obtaining good, pure milk. The slop milk from diseased cows, together with the impurities added to increase the quantity of artificial milk, and thereby increase the profits pecuniarily of the vender, have undoubtedly caused a great amount of the sickness in cities, especially among children. It were much better to do entirely without milk than to make use of the trash commonly sold for it in most of our cities.

BUTTERMILK

Is the residue of milk after its butter has been removed by churning. It consists of caseine, sugar, serum and a little butter. It forms a very agreeable, cooling beverage in warm weather, and is especially beneficial in fevers and inflammations. It is very slightly nutritive and of easy digestion, but should not be allowed to become too acid before using it. Some persons are very fond of boiled rice and buttermilk, while to others it is extremely disagreeable; it is a nutritious, healthy diet, however, when it agrees with the stomach.

BUTTER

Is an oily substance, of soft consistence, procured from the milk of animals by agitating it constantly for a length of time, which process is termed "churning." Ewe's milk contains the largest amount of caseine and butter, and is consequently less digestible and unfit for dyspeptics. Goat's milk ranks next, relative to its nutritive principles, and of which the same remarks may be made as of ewe's milk. Ass's milk is the least nutritive, but of the most easy digestion, and, on account of the small quantity of butter and large quantity of sugar of milk which it contains, it is very useful in convalescence from acute maladies, consumption or dyspepsia. It is sometimes prepared artificially by dissolving a couple of ounces of sugar of milk in a pint of skimmed cow's milk. The butter used at meals is obtained from the cow's milk, which is intermediate in nutritive and digestible properties between goat's milk and ass's milk.

Butter is used rather as a condiment than as a direct alimentary matter. It is very difficult of digestion, on account of the readiness with which its volatile, fatty acids are set free. Yet, when it is fresh and sweet, and spread not too thick upon bread, there are very few stomachs which it offends. When it becomes rancid it is peculiarly unpleasant and unhealthy, and should never be used for any purpose as diet. All fixed fats and oils of animals are of more difficult and slow digestion than any other alimentary principles, and with dyspeptics they are very imperfectly digested. Still, in small quantities, they are frequently beneficial among the robust and healthy; and in many diseases, where the digestive functions are perfect, a moderate employment of them is followed by an improvement of the general health.

ARTICLES OF VEGETABLE DIET.

Of these I will speak very briefly. They are much more numerous than those of the animal. The most important of them are cereal grains, as wheat, corn, oats, barley, rice, &c., and the nourishing power of which depends principally upon the glutin, starch and gum which form part of their composition.

WHEAT

Contains much more of the *glutin* and *fibrin* than any other farinaceous articles, owing to which wheat flour forms a superior article to any other for the preparation of bread

CORN.

Corn meal is extensively used in the United States for bread. It furnishes a healthy, palatable diet, and is very nutritious; it does not contain glutin, hence it does not rise like wheat flour. I deem it unnecessary to enumerate the various articles of vegetable diet or to note their mode of preparation. This is generally sufficiently understood by all classes for practical purposes.

FRUIT.

I do not propose to enumerate the varieties of fruit. I will only say, fruit is healthy and useful when used ripe. The most important, perhaps, in the United States is apples, as they can be easily had all the year. Grapes,

however, during their season, is, I think, beyond a doubt, superior to any thing else. It is gratifying, indeed, to note the interest that is now being manifested in the culture of this precious fruit. For both table use and wine it is destined to become the most deservedly popular of any other fruit in America, and while it bids fair to become a national blessing it also promises to be the most lucrative business the American farmer can engage in. The wine of the American grape is fast growing into general favor. Intelligent physicians now prescribe it in preference to alcohol in any other form. The most popular varieties now are the Norton's Virginia Seedling, the Clinton, the Herbemont, Catawba and Isabella. First in the list stands the Norton's Virginia Seedling, as a heavy wine; but the Clinton will compete fairly if not successfully with it in every respect; and, as it can be produced cheaper, will become the wine for the masses. For table use, from its abundance and easy growth, the Concord will perhaps stand long at the head of the list. Many other varieties are excellent for table use, and as the Hartford prolific is some weeks earlier every vine grower should raise it.

Every farmer should put out at least a few apple trees, peach trees, pears, prunes, cherries, &c., with a small variety of grape vines, gooseberries, currants, raspberries, blackberries, strawberries, &c. The time and cost would scarcely be missed, while they would afford him all the fruits he would want for his family. Their culture would only be a source of amusement and happiness for the family. It is pleasant to note the commendable desire that is now manifested in this country to grow fruit. Its abundant harvest will be reaped by the rising generation, who will, all things else being equal, be a more *cheerful* and healthy people than we are. I would

be glad to have more time and space to devote to this subject; it is one that has been much neglected by the medical profession, who are, or ought to be, the guardians of the public health. The physician has not discharged his whole duty when he cures disease, but he should, at all times, do and say all in his power to prevent disease and premature decay, and to promote the general health of the community, by recommending such sanitary measures as he can and urging the people to adopt them.

I know from a long experience how hard it is to get a well man to observe any laws of health; he generally waits until disease has taken hold of him before he moves in the matter. But there is a different spirit awakening in the minds of the people now, and I do hope it will increase until premature death will be as rarely met with as old age is now. Such a state of things can be had by knowing and observing the laws of life and health.

DRINKS.

WATER, TEA, COFFEE, AND ALCOHOLIC BEVERAGES.

Every drop of fluid taken into the stomach is conveyed into the blood, and before it is expelled from the system it traverses every part of the body.

WATER

Is as essential to life as air, heat or light; it enters into almost every substance which constitutes the food of man, and is, indeed, the proper solvent of all solid, nutritious substances.

The only fluid which is suitable for an ordinary drink, and which is the best suited for the nourishment of the system, for the dilution of solid food, and for the maintenance of a proper degree of fluidity in the blood, is water. Indeed, water is the only agent that can satisfy thirst, or which the *natural* taste of man prefers. Tastes for alcoholic drinks, tea and coffee are vitiated tastes acquired—they are artificial; yet, under certain circumstances, it is found advisable to combine with the drinks farinaceous, mucilaginous, acidulous, or aromatic substances, as in cases of sickness, convalescence, debility, during excessive heat, and in instances where water alone disagrees.

The purer the water the better it is for health. Many fatal epidemics have been commenced by the use of im-

pure water. It doubtless plays an important part in cholera epidemics, either as a predisposing or, as some think, an exciting cause. Dr. Snow thought that the poison was produced in the alimentary canal and existed in the cholera evacuations, and that the leakage of drains, cess-pools, &c., contaminated water, which, when drank, communicated the disease. Dr. Goodeve says that it is certain that impure water promotes the spread of cholera.

A great number of diseases have been traced to the use of impure water. Rain water is the most pure of all water, and this every farmer can have by building him a cistern. Persons in large cities are compelled to use water from rivers, which will do well enough if it contains no substance prejudicial to health or life. Spring water often approaches nearer to purity than any other save rain water, and is excellent if it is soft. Hard water contains certain mineral matters in solution, which lessen its solvent powers and occasion abnormal conditions of the blood, from which arise many diseases. Soft water, or "freestone water," should always be used.

Marsh or stagnant water always contains vegeto-animal matters in a state of decomposition, giving rise to peculiar acids or poisonous gases; hence they are very unhealthy, some occasioning ague, dysentery, and a great many other dangerous and troublesome diseases. They should never be used for domestic or medical purposes.

TEA-GREEN AND BLACK.

In speaking of this article as a drink I fear I shall bring down a shower of abuse upon my head from my fair readers, for amongst them it has grown into general use, and has become a general favorite. I dislike exceedingly to say any thing that is calculated to offend them,

for in such cases I always have visions of broomsticks, &c. But in writing this work I have a solemn duty to perform, and I will perform it if half a score of women were across the river pointing broomsticks and shaking their pretty fists at me. Tea, if used in moderation and only two or three times a week, is a grateful and harmless beverage, but if used for a long time in large quantities, or of great strength, it is exceedingly pernicious; it induces many unpleasant, nervous and dyspeptic symptoms, as wakefulness, tremors, palpitations, anxiety, and other distressing feelings. Tea possesses gently exciting and astringent qualities or properties; it also exerts an influence on the brain and nervous system. For a beverage, black tea, if it is pure, is preferable to green, as it contains less stimulating and narcotic principles; and it should never be used except at the evening meal, unless in cases of sickness, debility, &c. Green tea is best adapted in cases of sickness, in fevers, and in inflammatory diseases, colds, catarrh, and after a fit of intemperance; it rarely disagrees with the invalid, and often proves refreshing and agreeable, acting, if drank warm, as a diluent, diaphoretic and diuretic.

Tea, whether green or black, should never be used daily by persons in health; it should only be drank in moderation, at an evening meal, when the system is depressed or languid from exercise or the labor of the day. When the debility experienced at this time is owing to the heat of the season only there is no better fluid to overcome it than pure cold water; other drinks, however, are admissible, and may be used at the supper table, as buttermilk, toast water, sage tea, milk, or lemonade.

Persons should accustom themselves to vary their breakfast and supper beverages, and not use the same liquid daily, remembering that there is no fluid so thoroughly adapted to the wants of the system as pure cold soft water, and the more this is interfered with by the addition of foreign agents, the less healthful and beneficial it is rendered.

Children should never drink tea, except when required as a medicinal, refreshing draught. Persons of sedentary or inactive occupations require much less tea as a stimulant than those of active habits; often, when they use tea and coffee daily, they are subject to vertigo, headache, oppression at the stomach, which symptoms often disappear when water is substituted for these stimulants. I will not attempt here to speak of the adulterations of tea, but simply say it is not a nutrient, but simply a nervous stimulant that is seldom needed by any one. Still it is a harmless, pleasant beverage if taken in small quantities, and may be occasionally indulged in.

COFFEE.

I now come to speak of another popular and favorite, but somewhat pernicious beverage—coffee. It, too, is simply a stimulant, and not a nutrient to any extent worthy of mention.

There are several varieties, among which the Mocha, Java and Havana are considered the best. The infusion of torrefied coffee grains, after they have been properly roasted and pulverized, forms a well known and favorite beverage. Taken in moderation, with a proper amount of sugar and cream, it is a gentle, pleasant stimulus, but generally occasions a degree of wakefulness; in large quantities it produces derangement of the nervous system and the digestive organs, and if its use is persisted in it will generally produce dyspepsia.

Coffee should never be taken in large quantities nor

in very strong infusion, because it seldom fails to derange the stomach and injure digestion; it may also occasion wakefulness, tremors, headache and loss of memory, with many other unpleasant symptoms; many persons can not use it all on account of its disagreeable effects. The writer belongs to this number.

The stimulating effects of coffee, like those of intoxicating liquors, are always followed by a depression proportioned to the quantity and strength of the infusion employed and the degree of excitement occasioned by it. Constipation is one of the common effects of coffee.

Persons of sedentary habits, dyspeptics and children should not use coffee save as a medicine; it is occasionally useful in the sick room, and relieves some forms of headache. It is an excellent antidote to the baneful effects of opium, morphine or alcohol. It is, likewise, a valuable stimulant, in connection with brandy and opium, in cases of extreme exhaustion from hemorrhage from any cause.

Coffee may be used by most persons in moderation, but should always be with sugar and cream.

ALCOHOLIC BEVERAGES.

Spirits or alcoholic drinks used as a beverage are, unquestionably, the curse of the present age.

From the pure juice of the native grape, after it has undergone fermentation, through the long filthy list of lager, ale, porter, rum, gin and brandy, to the pure alcohol itself, death, moral and physical, is written in the cup. If I were able to borrow the golden tipped pencil of the tallest angel that basks in the glorious light of heaven, and could paint with artistic skill across the broad disc of heaven, I would say, in living, flaming, burning letters of gold, so bright and so dazzling that

every one could see, "Touch not, taste not, handle not the unclean thing." Death lies in the cup—death to the soul as well as to the body. And, strange to say, even in this enlightened age, while reform is the watchword in almost every thing, drunkenness is on the increase.

I have said it was the curse of the present age. It is the sin of our land, and, with our boundless prosperity, is coming in upon us like a flood; the sluice gates are thrown open. And if any thing shall defeat the hopes of the world which hang upon our experiment of civil liberty, it is that river of liquid fire which is rolling through the land, destroying the vital air and extending around an atmosphere of death.

"Who hath woes? Who hath sorrows? Who hath contentions? Who hath babblings? Who hath wounds without cause? Who hath redness of eyes?

"They that tarry long at the wine; they that go to seek mixed wine."

No pencil but that of inspiration could paint so many vivid traits of this complicated evil in so short a compass. It exhibits its woes and sorrows, contentions, and babblings, and wounds.

It is not my purpose in this work to try to lay bare the great sin of intemperance or present it in its moral aspect; the moral ruin it works in the soul gives it the denomination of giant wickedness. Of its effects on the human system I feel it my duty to speak. God has made the human body to be sustained by food and sleep, and the mind to be invigorated by effort and the regular healthfulness of the moral and physical system. Whoever, to sustain the body, or invigorate the mind, or "cheer the heart," applies habitually the stimulus of ardent spirits, does violence to the laws of his nature, and puts the whole system into disorder.

The stomach is the great organ of accelerated circulation to the blood, of elasticity to the animal spirits, of pleasurable or painful vibration to the nerves, of vigor to the mind, and of fullness to the cheerful affections of the soul. Here is the silver cord of life, and the golden bowl at the fountain, and the wheel at the cistern; and as those fulfill their duty, the muscular and mental and moral powers act in unison and fill the system with vigor and delight. But as these central energies are enfeebled the strength of mind and body declines, and lassitude and depression, melancholy and sighing succeed to the high beating of health, and the light of life becomes as darkness. Experience has decided that any stimulus applied steadily to the stomach, which raises its muscular tone above the point at which it can be sustained by food and sleep, produces, when it has passed away, debility—a relaxation of the over-worked organ proportioned to its excitement. The life giving power of the stomach falls, of course, as much below the tone of cheerfulness and health as it was injudiciously raised above it. Experience has also shown that the phenomena of which we have to treat under the denomination of alcoholism are due to the direct action upon the nervous system of a blood-supply charged with a high per centage of alcohol. If we surround a living nerve with alcohol of a certain strength, we find that it becomes paralyzed, i. e., incapable of transmitting impressions through the part to which the alcohol has been applied; while a very weak mixture of alcohol and water is incapable of producing this effect. Similarly, if an animal absorb into its circulation a certain quantity of alcohol within a given time, the nervous centres and the peripheral nerves become in a degree paralyzed. That this effect is, at least in part, due to direct action of strong

alcohol upon the nervous tissue can not be doubted; there is, however, a co-operative cause of no small importance—namely, it has been ascertained by the researches of various observers that the impregnation of the blood with large quantities of alcohol interferes with its absorption of oxygen; it thus becomes unfitted to support healthy nervous functions. Under these combined influences the nervous tissues, and particularly those of the central organs, become more unfitted for the performance of their proper functions; and this change progresses with a rapidity proportionate to the strength and frequency of the alcoholic influence.

It may be necessary to recall the principal facts which are known with respect to the action of alcohol upon the organism. Alcohol is readily absorbed from the stomach when it is empty. If the dose be moderate and the administration well timed, the effect upon the nervous system is simply that of a restorative stimulant. tions of fatigue are dispelled, the mind works more freely, a healthy sense of warmth is diffused through the body, and the arterial system acquires an increased tonicity if it was hitherto deficient in that quality. The small blood vessels, when relaxed in a condition of fatigue, are brought by a moderate dose of alcohol to a proper tension, from which they suffer no recoil. It has also been shown by able chemists that alcohol is a nutrient. For these reasons we find it sometimes indicated, and the best physicians of the land prescribe it; and I would remark here that when it is thus indicated I know of no other article that can be properly substituted for it as a medicine. If, on the contrary, the dose has been immoderate or administered at a time when it was not indicated, the pulse waves with a precisely opposite indication—that, namely, which proves that arterial

relaxation has occurred, and simultaneously with this the pulse becomes abnormally quick. At the same time other symptoms of a paralytic nature are observed, confined in the first instance to the spinal nerves and to the fifth cranial nerve. The former show their weakness by the occurrence of slight feelings of numbness and an impairment of muscular sense in the extremities; the latter indicates its affection by the occurrence of slight numbness of the lips. The vaso-motor fibres of the fifth nerve discover their partially palsied condition by flushing of the face and redness and watering of the eyes. cerebral hemispheres next give notice of the alcoholic influence by the occurrence of intellectual confusion, and the hypoglossi becoming simultaneously affected, the muscular movements of the tongue become difficult and articulation is impeded. The further stages of drunkenness consist in more or less noisy or sentimental delirium, passing gradually into coma; palsy, more and more complete, of voluntary motion and sensation; the medullaoblongata is palsied and breathing ceases; and, last of all, the organic nerves of the heart become incapable of performing their functions, and cardiac life ceases.

The irritant effects of alcohol on the alimentary canal are chiefly seen in the case of strong spirit drinkers, and more particularly in those who drink spirits "strait" (neat) or highly concentrated. Beer drinkers do, indeed, often suffer from a simple form of dyspepsia, and there is little doubt that slow degenerative changes are usually set up in the stomachs of those subjects; but, except in cases of enormous habitual excess, the dyspepsia is a transient phenomenon, which rapidly disappears on the adoption of a rigid plan of abstinence together with a simple medicinal treatment. The more concentrated alcohols, however, when used for any length of time,

may set up a formidable irritation, which produces intense congestion of the stomach or the intestines, or both; in short, a greater or less portion of the tract in which the radicles of the portal vein take their rise is subject to severe engorgement. Perhaps the most serious consequence of such an action is the occurrence which we now and then witness of *profuse hemorrhage* from the stomach or bowels.

Of the earliest symptoms which indicate a dangerous degree of nervous degeneration, the occurrence of marked sensory paralysis is one of the most frequent. Unlike the corresponding affections of the motor nerves, sensory paralysis is commonly exhibited in a slight degree in the upper extremities before it appears in the lower. The occurrence of any considerable degree of sensory palsy in the lower limbs is a sign of grave import; the patient so affected, unless he be induced at once to adopt a proper abstinence and an appropriate medicinal treatment, is almost certain very quickly to experience some organic lesion of the brain. Simultaneously with the occurrence of a considerable degree of sensory paralysis there is usually a great development of the muscular tremor, which often approaches closely to the type of paralysis called agitans. The mental powers are by this time usually affected in a marked degree—the most common mental condition being one of general intellectual enfeeblement and moral degradation, marked at this stage by cowardice and untruthfulness. At this point the progress of the case may diverge in either of several directions. In patients whose family history is strongly marked with the taint of insanity a tendency to suicide is often developed, or else the sufferer sinks rapidly into a state of confirmed and incurable dementia. In others the functions of muscular co-ordination is interfered with to a degree which makes the case resemble at first sight the affection known as Locomotor Ataxy. In others there occurs a sudden break down of nervous fibres in the corpora striata or optic thalami, which produces a stroke of hemiphlegic paralysis. In others, along with some symptoms of mental alienation, a general motor palsy is so distinctly observed as strongly to suggest the idea of commencing general paralysis of the insane. In others the rupture of a cerebral artery leads to an effusion of blood, and the sudden occurrence of an attack resembling ordinary apoplexy. This is the apoplexy that so many respectable men and women in our great cities die with. In other cases the patient suffers attacks of convulsions, which can not be distinguished from those of epilepsy; this condition indicates a hopeless condition of the nervous centres. They are almost always accompanied by an advanced degree of dementia.

Acute alcoholism presents itself under four heads: Delirium Tremens, Acute Mania, Acute Melancholia and Oinomania. These are the terrible sequalea of the immoderate use of alcoholic drinks; this is the condition the physical system is brought to by strong drink.

Thus I have given, carefully and correctly, the effects upon the physical system, that men may not blindly destroy themselves, and may desist. I have not overdrawn a single effect. I have adhered strictly to the unerring developments of scientific investigation and observations, and the drunkard may depend most certainly upon realizing the terrible symptoms above given; and not only realize the terrible symptoms himself, but there is no fact more certain than the transmission of temperament and physical constitution, according to the predominant moral condition of society, from age to age. Luxury produces effeminacy and transmits to other gen-

erations imbecility and disease. Bring up the generation of the Romans who carried victory over the world and place them beside the effeminate Italians of the present day, and the effect of crime upon the constitution will be sufficiently apparent. Excesses unmake the man. The stature dwindles, the joints are loosely compacted, and the muscular fibre has lost its elastic tone. No giants' bones will be found in the cemeteries of a nation over whom the waves of intemperance have rolled for a century.

The duration of human life and the relative amount of health or disease will manifestly vary according to the amount of ardent spirits consumed in the land. As the jackal follows the lion to prey upon the slain, so do disease and death wait on the footsteps of inebriation.

In view of the evil effects of intemperance, physically, I beg the rising generation at least not to use spirits in any form as a beverage. Do not attempt to be a "moderate drinker;" nine out of every ten moderate drinkers become drunkards. It is the moderate drinker that forms the drunkard. An appetite is created for the destroyer that few indeed can resist; and before you know it, notwithstanding all your resolves, you are a drunkard, a hopeless inebriate. You know and fully understand your condition, you feel that you are degraded, and imagine that you never can again be received into respectable society, you know that through your own folly your wife and little ones are in a state of starvation, you compare your former with your present state, and all other thoughts so harass you that you hasten to the fatal cup to silence them, to bury them in the insanity of alcohol.

What is drunkenness? Go visit your prisons, and among their dreary cells behold the house-breaker, the

felon, the murderer, the outlaw, who fears neither the laws of God or man. Go visit your hospitals, and among their inmates behold those who are afflicted with disease, paralysis, convulsions and insanity. Go visit your rum holes, your sinks of iniquity, where thieves, paupers and murderers are manufactured, and observe the bleared eye, the bloated countenance, the palsied and tottering frame, the staggering gait, the poverty and wretchedness, and the detestable deeds of vice everywhere apparent, and hear the oaths and curses, the vile, obscene and loathsome language, which issues from the lips of the inhabitants of these vile dens of sin. when your soul sickens with the sight of human misery and depravity—has turned away filled with horror. disgust and detestation—know that all this is drunkenness! All this is the effect of rum.

Shakespeare says: "Oh, thou invisible spirit of wine, if thou hast no name to be known by, let us call thee devil." "Oh, that men should put an enemy in their mouths to steal away their brains." He might have added, to steal their lives and souls.

The direct diseases brought on by alcoholism—delirium tremens, acute mania, acute melancholia and oinomania—will be treated under their respective heads.

OPIÚM EATING.

The pernicious habit of opium eating has become an evil so wide spread that it demands a notice here. Like whisky it is destroying the minds and constitutions of thousands of our fellow men. The number of opium eaters in almost every city in the Union, and in many portions of the country, would astonish any one who is not posted on the extent of this vice. This is fashionable drunkenness. Ladies who would scorn the very idea of drinking spirits will get gloriously and "obliviously" drunk on opium. Ladies of the highest respectability have been arrested on the streets of New York city lately for drunkenness, caused by opium. The amount of opium sold by druggists to habitual eaters is perfectly marvelous—particularly in the large cities.

Is it a less shameful act to be *drunk* on opium than it is on alcohol? Is the injury sustained by the system less? Certainly not. Opium in excessive doses is a powerful narcotic poison, producing soon after it is taken giddiness and stupor, with scarcely any previous excitement; the stupor increases rapidly, accompanied with complete torpor, slowness of breathing, depression of circulation, general relaxation of the muscles, contracted pupils, and, unless active treatment be speedily employed, death quickly ensues. This is the effect of that drug in excessive doses; but in smaller doses it produces at first excitement of the vascular system, which is

accompanied with exhilaration of the nervous functions, with increased heat of the body and pleasurable sensations throughout the whole system, even in a higher degree than they are produced by champagne or brandy.

For this sensation the drug is eaten. An individual under the influence of opium talks and laughs, and feels exceedingly happy, while he presents all the appearance of intoxication from alcohol, staggering and falling in the same ludicrous and awkward manner; in short, presenting all the loathsome and degrading phenomena of a "drunk" on mean whisky. Is not the thought of this enough to crimson the cheek of the fair opium eater, who daily makes herself drunk on this poisonous drug. It is with reluctance and pain that I charge the gentler sex with crime, or often indiscretions, but truth compels me to lay the curse of opium eating chiefly at their doors. It is a lamentable fact that the female opium eaters largely outnumber the male sinners in that habit. This, perhaps, is owing to the fact that men can step into a bar-room on almost any square and "smile," while opium or morphine is the most convenient for the ladies.

I know men of talent and ability who have used opium until they are worthless for any kind of business without it. They are as nervous without their opium or morphine as the old sot is without his rum. I know ladies of high respectability who are in the daily habit of getting intoxicated on some of the forms of opium. They carry it to such an excess that they often have to feign "headache" (ever woman's convenient shield), and go to bed to prevent exposure. Others take a large dose at bed time so as to experience the pleasant sensation for a few minutes, and then to become oblivious to every thing until a late hour next morning.

If the pernicious habit was confined to only a few

misguided, selfish individuals the fact would not be so lamentable, but the number who are thus on the high road to ruin is fearfully large—their "name is legion."

This thing is a matter of no small importance to the people of the present age; it bids fair to outstrip the fearful sin of drinking. Its devotees are a class who are doing much to bring about a reform in drinking. The women are doing much everywhere for the cause of temperance. They are reforming their husbands, fathers, brothers and neighbors. They are building up a mighty temperance cause in this country—one that will ere long wield a mighty political power, and one that will save hundreds and thousands of our race from disgrace and ruin. It does my heart good to place this great and important work to their credit. But while this is the case I will not shut my eyes to the fact that they are nursing a habit more dangerous in its influences, more fatal in its effects, and one better calculated to fasten its poisonous fangs on its victim heart's and destroy them. Opium eating can be done better "on the sly" than whisky drinking, owing to the small quantity necessary to produce drunkenness; the sensation produced by it is more pleasant, and there is not that odium attached to a "drunk" on opium that there is on whisky or other drinks. For these reasons it is fast growing into popularity, and bids fair to-day to be the great curse of the age.

Now, ladies, my gentle friends, let me implore you to frown on this evil; if you have begun the pernicious practice, desist—you who are first in all that is good and noble, you who ever raise your warning voices against "every appearance of evil," who are first to train the youth in the ways of piety, who are the first to obey the everlasting gospel, who are the first to move in every great work

of philanthropy, whose hearts and hands are first open to the poor, you without whom how blank and dreary would be life, you to whom we owe our present existence. To you we owe the cultivation of our plastic minds in childhood, forming us for the pursuits of more matured life, giving to us impressions which can never be effaced by the busy finger of time, and the remembrance of which calls up the most grateful and pleasing associations; to you we owe all the happiness of a well-spent life. In sickness or on the bed of death no one can watch over us with the care and solicitude of a mother, wife or sister. Your words of kindness and sympathy cheer and comfort us in our afflictions; your fair hand can smooth the sick pillow or relieve the aching brain better than any other. Through your influence the hour of trial and suffering is made to pass as a shadow, misfortune becomes like golden sunshine, and the pangs of adversity yield to your smile and affection; you cause man to view the dangers and terrors surrounding him as momentary clouds floating by, and guide him onward in the road to virtue and happiness; you are man's harbor of safety and contentment, his richest treasure, Heaven's best gift, and the link that binds man forever to his Creator. You have done much to reform and civilize the world, and while I entreat you not to relax your noble efforts in any of your works of piety, philanthropy or temperance, I plead of you to strike quick and heavy blows at the head of the monster sin of opium eating. If a great reform is not effected in this thing soon it will be absolutely necessary for legislation to come between opium and its victims, so rapidly is the fatal practice increasing.

Opium, like alcohol, is a remedy of no mean importance, and when indicated its place can not be supplied

by anything else. When I speak of opium I will be understood to include all of its preparations, such as laudanum, morphine, &c., &c. Its antidote, when taken in an over-dose, are (after the use of the stomach-pump or a brisk emetic of a large tablespoonful of ground mustard in a half pint of warm water, repeated until the contents of the stomach are discharged): brandy, ammonia, strong coffee, or camphor and musk, in connection with external stimulants, such as cold affusion, loud talking to the patient, compelling him to walk between two assistants and applying aq. ammonia (hartshorn) to the nostrils.

I have not given the remedial effects of opium upon the system, but will again remark that opium, when indicated and properly used, is one of the very best articles belonging to the materia medica. It is generally used for its anodyne effects.

Below I give an extract from a New York paper which will give a faint idea of the extent of the use of the drug in that city. A few days ago I saw an article in one of our St. Louis papers giving some statistics showing to what a fearful extent it was used in this city—several hundred dollars worth every week were sold to the regular "eaters." It is strange, indeed, that rational men and women will act so unwisely in a matter that so directly interests them as the preservation of their health. I certainly think that it is chargeable to the lamentable fact that they know so little of the laws of health and life. When they begin to understand these a change may be expected.

" Opium Eating in New York—Its Fearful Extent— Ladies Using Opium.

"The use of the pernicious drug is not confined to the men; there are hundreds and thousands of women who are in the daily habit of intoxicating themselves with it, and they are found in all grades of society, but chiefly among those who are not dependent upon their own exertions for their support. Some of the drug stores up town and in Brooklyn sell more opium to women than to men, the latter buying chiefly at the down town shops. Not long ago a lady of one of the first families was arrested on the street for drunkenness and locked up in one of the station-houses. She had all the appearances of being intoxicated, and the police very naturally concluded that she was of the fair but frail class, and the best thing to do with her was to lock her up. It turned out on investigation that she was wholly innocent of having swallowed fusil oil or any thing of the sort, but had only been indulging in opium. The affair was hushed up, and the name of the lady did not appear in print. Two or three cases like this have occurred, and some of the police say that they have made several arrests under the mistaken impression that their subjects were suffering under too heavy stress of whisky.

"Very few of the ladies who use opium venture into the street while under its influence, and the fact that these arrests occur in public shows that the habit is very wide spread. Many of those addicted to it conceal the fact from their nearest friends, while others are in the habit of meeting in little parties and having a social chew, just as some of the ladies down South used to indulge in social "dips." Opium takes the place of snuff, and the parties generally get up to a high pitch of enthusiasm. As opium does not lead to a head-breaking and combative intoxication, like whisky or other strong drink, the fair creatures do not, save in rare cases, disturb their neighbors while at these opium seances. An exception is sometimes found; there was one a few

months ago, when the female inmates of a house on Fourteenth street fell to pulling each other's hair and committing other breaches of propriety while under the influence of opium. But then it must be remarked that they were not, at best, the possessors of good character.

"OPIUM AMONG MEN.

"Men make less concealment of the opium habit than women, and from their more frequent mingling in business affairs they are more liable to detection. I know several men in business who are in the habitual use of opium, and generally carry neat little lumps in their pockets. The use of the drug gives them a certain nervousness of manner, which is probably the first sign to be discovered. Any metropolitan reader of this can probably call to mind from one to half a dozen men he has met whose manner indicated that they were no strangers to opium. I know two editors who use a great deal of the drug; one has not yet impaired his faculties with it, though he will do so before long; the other has taken so much of the narcotic that his brain is stupefied and his thoughts often wander. Still he writes well and often brilliantly, and none who read his productions would imagine that they came from a head that is frequently more than two-thirds insensible, while the body to which it belongs is in full activity.— "Waterloo's" New York Letter to the Rochester Chronicle."

ABSINTHE.

It would seem that quite enough death and destruction could be found in alcohol and opium. But the people are restless and impatient and seem determined to exhaust the resources of science in trying to find an article to destroy body and soul, hence a new drink has been made which is called "Absinthe." It takes its name from the Artemisia Absinthum or common wormwood (this belongs to the fish-berry class); absinthe is the French name. The properties of this plant are stimulant, tonic, narcotic, sedative, and are said by some to be anthelmintic. In over-doses it produces insensibility, convulsions and foaming at the mouth. This is a beautiful drunk. The only merit absinthe seems to have over alcohol or opium is, that it seems to destroy the mind in much shorter time than either of the others, or in fact than both combined. Absinthe is another drink that is used mostly by those in high life, and particularly by the ladies, who soon become fascinated with it, lose all power of control over themselves and soon become miserable wrecks, and are only glad to escape from their wretchedness and shame by death. Ladies, beware of this viper.

I give below an extract from a New York paper published a few days ago:

"Absinthe Drinkers.

"It is alarming the extent to which absinthe is coming to be used in this metropolis. Most of the bars retail it out in the same manner as they do bourbon. Young and old go out to drink, and when one calls for a whisky cocktail another will order absinthe. One of the most brilliant writers of the New York press has nearly ruined himself, physically and intellectually, by the use of this pernicious sedative for only a year and a half.

"I saw the other day a talented lady, the wife of one of the most prominent professional men of this city, who has nearly lost her reason by the use of absinthe. She first took it to allay pain; she now takes it to allay appetite. Her self-control is entirely gone. She totters upon the brink of the grave, looks forward with joy to death, and frequently undertakes to put an end to her mental sufferings. A beautiful home, loving husband and fine children, together with all the enjoyments which wealth and refinement can bestow, are not sflicient to deter her from indulging in this soul-and-body-destroying drug.

"The effects of absinthe seem to be swifter and more fatal than those of either opium or morphine. It obtains an all-powerful control over its votaries, deadens the sensibilities, and is, indeed, the 'guillotine of the soul.'"

TOBACCO.

The use of this pernicious weed has become so prevalent in this country that in some places a large majority of both sexes above the age of ten or twelve years use it. The same habits prevail to a great extent in almost every portion of the globe.

When we take into consideration the disagreeable and repulsive character of this filthy article to the unvitiated palate, it is truly surprising that it ever should have been thought of as an article for such use at all; and when to this consideration is added the exceedingly important one that it is highly injurious to the human system, the fact of its general use becomes still more astonishing. Many, however, are not aware of its pernicious effects, but none are unacquainted with its filth.

It is said that three drops of the distilled oil of tobacco dropped upon a cat's tongue will destroy its life in five minutes, and, in many instances, it is also said, that its use internally, and even externally, has caused death in a very few minutes. A tobacco poultice applied to the pit of the stomach will quickly produce vomiting.

Old Dr. Darwin says, "The universal custom of chewing and smoking tobacco for many hours in the day not only injures the salivary glands, producing dryness in the mouth when this drug is not used, but I suspect it also produces scirrhus of the pancraes. The use of tobacco in this immoderate degree injures the power of

digestion, by occasioning the patient to spit out that saliva which he ought to swallow; and hence produces that flatulency which the vulgar unfortunately take it to prevent."

But smoking and chewing not only carry off the necessary saliva from its proper place, they likewise saturate the tongue and mouth with tobacco juice, thereby vitiating the saliva that remains, which in this pernicious and poisonous condition finds its way to the stomach. Who, in view of these considerations, can wonder that tobacco fixes its deadly grasp upon the organs of vitality, gradually undermining the health and sowing the seeds of disease, which are seen, sooner or later, to take root and spring up, carrying away its victim. It seems, says a good writer, to act directly upon the nervous system, enfeebling, exhausting, or destroying the powers of life.

Instead of preserving the teeth from decay, as many suppose, the chewing of tobacco wears down or absorbs the grinding surface of the teeth much faster than would otherwise be the case. So active a poison as the smoke or juice of tobacco continually in contact with the surface of the teeth must tend to destroy their vitality, and, consequently, to hasten instead of retarding their decay, while either turns them black and makes them look filthy.

It also produces a husky dryness of the mouth, creating a thirst which, in many cases, is not satisfied short of alcoholic drinks. In this way the use of tobacco often leads to that soul blighting curse—drunkenness. To this dark catalogue may be added the turbid nostril, the besmeared lip, the squirting of filthy saliva upon the floor, furniture, carpets, and even upon the clothes of those around you; and last, though not least,

the foul and offensive breath, which to those whose sense of smell has not been perverted is almost insupportable.

The use of tobacco is a needless waste of money—nay, worse than throwing it into the ocean, where it would at least do no harm.

Tobacco is not useful in any form as a medicine; it has been frequently used in the form of an ointment or a poultice, but in either preparation its action often goes beyond your expectations, and has been known to produce death. The evil in the use of alcoholic drinks and opium is in their abuse, as both are excellent therapeutic agents when indicated, but the evil of tobacco is in its use at all.

In the *Christian Pioneer* there is an excellent article from a pious lady. The journal is published at Chillicothe, Mo., edited by Elder D. T. Wright:

"A Protest.

"A 'sister' sends us a protest against the use of tobacco in houses of worship. She is engaged in a good cause and has the sympathy of the sisterhood and of every truly refined man.

"'There is an evil which I have seen under the sun, and it is common among men.' The evil of which we speak is tobacco chewing in church. Much has been said by our ministers concerning this offensive practice, but to little or no purpose. Possibly the remonstrance of the sisters may have some effect.

"We enter a house of worship and approach a seat by the stove. Here we find the floor in a horrible condition, the effect of tobacco made use of by brethren who have previously warmed themselves there. The house becomes filled and the brethren vacate their seats to accommodate the sisters with a seat; but here we find such pools of tobacco spittle upon the floor that we feel more inclined to stand than to bring our clothing in contact with the filthy floor by seating ourselves. Imagine our consternation when, by accident, a handkerchief or glove falls upon the floor! By a little observation we see here and there a brother incline the head and eject from his mouth a fresh installment to the defilement already upon the floor of the house of God. Brethren, we are fully persuaded that such things ought not to be. What would you think if the sisters were to indulge their appetites by eating cakes and apples during the time of worship? Is there more impropriety in gratifying a relish for food on such occasions than there is in gratifying a relish for tobacco? 'Have ye not houses to eat and drink in, or despise ye the church of God?'

"If brethren are so enslaved to the use of tobacco that they can not abstain from its use during the hours of worship, we advise them, if they believe there is any efficiency in prayer, to imitate the example of one of whom we have read, who, finding himself unable in his own strength to quit the use of tobacco, prayed for help and became a freeman.

"Brethren, we are in earnest in this matter. It has been a source of great annoyance to us, and if you can not look upon the subject in the same light that we do, pray have charity for the 'weaker vessels,' and, according to the divine injunction, 'Give none offense in anything.'

"We are aware that there are many brethren to whom these remarks do not apply, yet we know that there are those to whom they do apply, and to such we submit this christian protest."

In addition to this christian "protest," I would earnestly appeal to all who use this filthy and pernicious article to DESIST. *First*, because you have no right to

contaminate the air that others must breathe with tobacco smoke and the disagreeable stench arising from the filth that you eject from your mouth. Second, because you have no right to saturate a floor or carpet that others must use. Third, for the sake of your health, that must be materially injured by it. Fourth, for the sake of your pocket, which must be considerably depleted by the purchase of the article. Fifth, for the sake of your time. Sixth, for the sake of your friends, who can not fail to be pained in your company. Seventh, for the sake of your voice. Eighth, for the sake of your memory, that it may be vigorous and retentive. Ninth, for the sake of your judgment, that it may be clear and correct to the end. Tenth, for the sake of your soul-do you not think that God will visit you for your loss of time, waste of money and needless self-indulgence? Have you not seen that the use of tobacco leads to drunkenness? Do you not know that habitual smokers have the drinking vessel often at hand ("the glass of lager") and frequently apply to it, nor is it any wonder, for the great quantity of unnecessary moisture which is drawn off from the mouth, &c., by these means must be supplied in some way. You tremble at the thought, and well you may, for you are in great danger. Then is it strange that a Turkish Emperor, or a Russian Czar, or a Persian King should forbid its use on pain of death?—mitigated, it is true, in the case of snuff taking by merely having the nose cut off. Nor is it strange that Pope Urban VIII. made a Bull to excommunicate all who used tobacco in churches.

But if all other arguments fail to produce a reformation in tobacco consumers, there is one which is addressed to *good breeding* and *benevolence*, which for the sake of *politeness* and *humanity* should prevail. Consider how disagreeable your custom is to those who do not follow it. An atmosphere of tobacco effluvium surrounds you wherever you go; every article about you smells of it—your apartments, your clothes and your breath. Nor is there a smell in nature more disagreeable than that of stale tobacco arising in warm exhalations from the human body, rendered still more offensive by passing through the pores and becoming strongly impregnated with that noxious matter which was before insensibly perspired. It is loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in its black, stinking fume nearly resembles the horrible stygian smoke of the pit that is bottomless.

BATHS-BATHING.

TURKISH BATH.

The preservation of health depends to a very great extent upon cleanliness. The sympathetic relations which exist between the skin and internal organs, as the kidneys, lungs and liver, are very great, and, as a consequence, whenever the functions of the skin are interfered with, whether from exposure to sudden changes of temperature or from the accumulation of filth, these internal organs and many others suffer in proportion. The skin possesses a nervous system which renders it sensible to all external impressions, which are readily transmitted from it to the brain, through the agency of the nerves; it is, likewise, endowed with a system of blood vessels which play a very important part in the animal economy.

Besides these there is contained within the skin numerous minute tubes, spirally and irregularly coiled upon themselves, each of which is in close proximity to one of these capillary blood vessels, which separate the *perspiration* from the blood in the capillaries. These perspiratory organs discharge the perspiration externally through a minute mouth or pore, which, under ordinary circumstances, passes off in the form of vapor, being termed *insensible* perspiration; but when the system is over-heated by exercise, increased heat or mental excitement, the perspiration is thrown off in such large quantity as to form a watery fluid upon the surface

of the body, which is called *sensible* perspiration. ("sweat.")

It is estimated that there are 3528 perspiratory pores in each square inch of skin on a human being. Now each of these pores being the aperture of a little tube about a quarter of an inch long, it follows that in a square inch of skin there exists a length of tube equal to 882 inches, or 73 1-2 feet. Now the number of square inches of surface in a man of ordinary height and bulk would be about 2500; the number of pores, therefore, would be 7,000,000, and the number of inches of perspiratory tube 1,750,080—that is, 145,833 feet, or 48,600 yards, or nearly 28 miles. Surely such an amount of drainage as 28 miles in the human skin is a consideration of no mean importance. What if this drainage were obstructed by filth or otherwise? Could less be expected than a derangement of such organs as the lungs, liver and kidneys, and, in fact, may we not readily expect to find the crimson fluid of life contaminated and poisoned? Could we have a stronger argument for enforcing the necessity of attention to the skin?

Besides the perspiratory organs, the skin is also provided with sebaceous or oil glands, which, although resembling the perspiratory glands in their organization, are more complex and are not so uniformly disseminated over the body; being found over the nose, certain parts of the face, ears, &c., and wherever hair is present, while on the palms of the hands and soles of the feet they are absent. These glands secrete an oily matter which protects the skin from the influence of fluids with which it is apt to be bathed, also from an undue action of the sun and atmospheric changes, keeping the hair and its roots in a soft, pliable condition. But when from any cause the functions of the skin is sluggishly per-

formed, the fatty matter instead of being discharged upon the skin is retained in the oil duct, where it concretes into a matter of the consistence of cheese; the oil tube becomes gradually enlarged by the fresh deposition of oil-globules, and at its mouth will be eventually observed a black point, which those on whom it forms are in the habit of squeezing out, supposing the mass of fatty matter to be a worm. Although not a worm the microscope has discovered to us that it contains animal-cules, of elongated form, from about the one hundred and thirtieth to the fortieth of an inch in length, having an obtuse head which is directed inward. They are met with in groups of from two to twenty, increasing with the inactive state of the skin, and diminishing as it arrives at a normal activity.

Perspiration is mixed with the above oily and other matters; it has an acid smell and reaction, which is owing to the presence of lactic or acetic acid, and contains about from one-half to one and a half per cent. of solid matter, consisting principally of animal matter, with some saline substance discharged from the serum or watery portion of the blood. When these perspiratory matters are permitted to remain in contact with the skin for any length of time they rapidly decompose, lessen the activity of the skin, causing skin diseases, and contaminate the surrounding atmosphere, which, when confined, will occasion fevers and other maladies, often of a dangerous character; and, undoubtedly, many lingering disorders are thus occasioned, especially of the lungs, kidneys and liver. The greater the obstruction to the exhalent action of the skin the greater the liability to serious disease, and when it is checked the blood becomes imperfectly ærated, the temperature of the body is rapidly reduced, and death soon ensues. From the

above statements will be seen the vast importance of keeping the skin clean and healthy, in order that it may properly perform its functions. A person with a clean, healthy skin preserves a greater amount of health, of good feeling, of pleasant disposition, of proper nervous action, cheerfulness and piety than he possibly can if the skin is neglected and filthy; he feels if his skin is clean and in good condition that he is "sound all over," while a filthy or diseased skin is a source of constant annoyance to its possessor and all who are associated with him.

The Turkish Bath is certainly a course of the most thorough cleaning I have ever seen; the process is one which, while it is the most pleasant, is at once the most thorough known to man. The people of St. Louis are most fortunate in having an institution of this kind at No. 410 Market street, fitted up by Prof. William Roberson precisely on the Oriental plan, with an eye to the comfort and welfare of those who have the good judgment to avail themselves of this beneficiary luxury. The writer of this article has just come fresh and cheerful from one of Prof. R.'s Turkish baths, and feels it a duty to recommend them to all who are situated so they can have them. The process is simple and practical in the extreme. You are first taken into a dressing-room where you are divested of your clothing, you are then taken to a room filled with hot air by means of a furnace, say to a temperature of 130° Fah.; here, upon entering, your head is well sponged with tepid water, then you are wrapped in a sheet and laid on a reclining bamboo chair, where you remain for from ten to twenty minutes, or until perspiration begins; you are given a sponge wet with cold water and directed to sponge your face occasionally, which relieves you of any sense of oppressive

heat. After remaining here as above stated you are then taken to an adjoining room, kept about 30 degrees warmer than the first, where you begin at once to sweat profusely; you are kept here ten or fifteen minutes and then taken to the bathing or shampooing room. In the bathing room you are placed on a marble slab or large table and rubbed by the attendant from head to foot, kneaded and treated to a "right smart chance of slapping," which is done by the Turkish conductor at Prof. Roberson's in the most scientific manner, inviting the blood most cordially into the capillary vessels. Then you are most thoroughly washed with warm water and soap and again rubbed and slapped, your joints worked and rubbed, &c. From the table you are put under a shower bath of moderately cold water where you are most thoroughly rinsed, then you are put through a light process of toweling and wrapped in a sheet and taken to the "cooling room" where you are left to cool off and enjoy the happy consciousness that you are externally at least most thoroughly clean.

If this simple process were practiced by every one once a week, skin diseases and many organic diseases would soon disappear from the list altogether.

Thus far I have spoken of the *Turkish* bath as a preventive of skin and other diseases; in this respect it is valuable, but its usefulness does not end here by any means. In the treatment of a very large class of diseases the energies of the physician must necessarily be directed to the skin as auxiliary.

There certainly is no bath that will more thoroughly cleanse the surface than the *Turkish* bath.

SPIRIT VAPOR BATH.

The spirit vapor bath, or hot air bath, was "first introduced to the notice of the profession" by Prof. John

King, of Cincinnati, about a quarter of a century ago. It soon grew into popularity, and still stands deservedly high as a preventive of disease, and as an auxiliary in the treatment of many forms of disease, particularly of the skin. It is so simple and the mode of its administration is so easy that it recommends itself to the public, particularly in localities where the Turkish bath can not be had. As regards its administration the process is so simple that any one can take it, even without an assistant. The patient is undressed and seated on a wooden-bottomed chair or stool, so that the heat shall not strike him directly as it issues from the burning spirits. After seating himself a large blanket is thrown around him from behind, covering the back part of his body, and also the chair on which he sits, and is then pinned in front; another blanket is passed around him in front and pinned behind, and thus the body is so completely covered that the escape of the heat is prevented. A saucer containing about two tablespoonfuls of whisky or alcohol is placed upon the floor, under the chair, and lighted, by touching to it a piece of burning paper, then drop the part of the blanket that has been raised and allow the spirit to burn until it is consumed, taking care that the flame does not burn the blanket. As soon as the spirits are consumed entirely and the flame extinguished add the same quantity of spirits and again ignite; continue until the patient perspires freely; this will be in five or ten minutes, as a general rule. During this process the patient's face should be occasionally sponged with cold. water.

As soon as the body and limbs become well bathed in perspiration the blankets may be removed and the whole surface sponged freely with water a little warm, to which has been added soda or saleratus enough to make it feel a little "slippery." After this is done the whole surface should be rinsed with moderately cold water and briskly dried with a *soft* towel. In this manner the skin will be cleansed and tone restored to the relaxed blood vessels, and by fixing an increased amount of blood in its cell structures, a more vigorous capillary circulation established.

The spirit vapor bath is useful in all skin diseases, colds, febrile and inflammatory attacks, recent amenorrhœa and dysmenorrhœa, and sometimes in supended lochia and many of the inflammatory attacks during the puerperal period. It should not be administered to those who have great weakness of lungs, in whom the process of decarbonization of the blood goes on imperfectly, or it will be attended with injurious consequences.

VAPOR BATH.

This is one of the old institutions, and a very useful one, too, but it is so well known that a description of it would seem hardly necessary. From this bath the name "steam doctors" was given to Thompson and his school. As much as it has been derided by the "regular profession" and their advocates, it has done an immense amount of good, and is an institution that ought to be perpetuated. It is administered just like the "spirit vapor bath" above described, only the steam is generated with an apparatus in which water is boiled by means of a spirit lamp, or from a vessel containing water placed under the chair in which hot bricks, stones or smoothing irons are immersed. The time required to produce perspiration is from ten to twenty minutes. You must not mistake the vapor that settles on the body and limbs for perspiration. The head and face should be wet with cold water at the commencement of the operation and repeated frequently during the process; this will prevent unpleasant faintness or fullness of blood in the head. After the desired amount of sweating is had the same plan will be applicable in this as above recommended in the "spirit vapor bath," i. e., the washing and rinsing. It was, however, the custom to take the patient from the chair still wrapped in his blankets and place him in bed with them still around him, and in addition to this place jugs of hot water or hot bricks or stones to his feet and knees and allow him to remain in this condition for hours, drinking hot teas, &c. Such a course, however, is only calculated to further exhaust a patient without even the promise of any benefit. This is the feature no doubt that has caused the once famous vapor bath to fall comparatively into disuse.

THE DOUGHE.

This consists in a stream of water, varying in size from half an inch to two inches in diameter, and having a fall of some feet. In domestic practice it can be performed by pouring water from the spout of a tea kettle held some distance above the patient, refilling the kettle when empty, until the process has been continued for a sufficient length of time. This form of bath is especially adapted to the treatment of *sun stroke*; in fact it can scarcely be successfully treated without it, and should never be omitted as one of the earliest appliances to the head and spine. The douche is not a form of bath I would recommend for general use; injury may be occasioned by its injudicious employment.

FOOT BATH (Pædaluvium).

This bath is so common and so well understood that a description of it is almost unnecessary. A vessel is filled with water as hot as it can be comfortably borne and the

feet immersed in it; salt or mustard may be added to the water. The feet should usually remain in the bath for ten or fifteen minutes, and when they are taken out must be rubbed dry with a towel and then clothed or wrapped up so as to keep them warm. Simple as this form of bath is it is of incalculable value as an auxiliary in the treatment of many diseases. It should always be practiced when the feet are unduly cold. "Keep the head cool and feet warm" is an old adage, and gives a rule of perhaps as much real importance as any adage ever spoken in regard to health. This rule is sadly neglected by females. How often do they permit their feet to remain cold for hours, and even days, going to bed at night with them as cold as they would be in death. Such a practice as this, my fair friends, will soon cause the bloom of health to fade from your cheeks and the dark, tell-tale, black ring to encircle your once sparkling eyes. you have been guilty, as above "charged and specified." never, after you have read this paragraph, again retire to your couch to attempt to sleep with cold feet; it will not be much trouble to take a foot bath, or if this be quite out of the question, at least place a hot brick or two to your feet.

SHOWER BATH.

This is another form by which water, either warm or cold, may be applied to the body. A vessel may be perforated in such a manner that the water is permitted to escape in small streams, and rapidly descend upon the person and completely drench him, imparting, if cold, a powerful shock to the system. Prof. J. King says "the effects produced by a cold shower bath upon many persons of strong constitution, as well as upon the delicate and those of extreme nervous sensibility, are so severe and disagreeable that its application under ordinary cir-

cumstances would be very improper. I believe," says the doctor, "that the sudden application of cold water to the system, continued daily or frequently repeated, is very seldom beneficial, and is more frequently a cause of disease than is supposed. It is apt to occasion a subsequent depression, languor, headache, and in the plethoric apoplexy. It should not be used when disease of some internal organ exists." I have quoted this from Prof. King, not that I endorse the whole of it, but that persons who use the shower bath may do so with proper caution. For my part I deem it a luxury in "hot weather," and have never seen any bad results follow its use. Dr. King recommends a tepid shower bath (to which the above objections do not apply) once, twice or thrice a week.

A shower bath should be so arranged that the water will descend rapidly and be soon discharged; and immediately after the drenching the person should dry himself with a towel not too rough. The former custom has generally been to use a great deal of friction with rough, coarse towels. This is a practice I never would subscribe to; this rough process often breaks the firm cuticle and destroys what nature intended for our benefit. A moderate amount of quick rubbing is quite necessary, but it should not be too hard, and above all should not be done with the coarse, rough towels that we often find around our bath houses.

BATH BY IMMERSION.

This is a very good plan, but certain rules are necessary to be observed in order to prevent any mischievous effects. The water must be of a temperature adapted to the patient. Should a chilly sensation be experienced a few minutes after entering, the water is too cold; the

proper temperature will occasion a refreshing sensation. Moderate exercise must be taken shortly previous to plunging into the water, but this exercise should not be sufficient to fatigue or cause copious perspiration. The person should remain in the water until the bathing is finished, but this should not be too long. Five minutes is generally long enough to remain in the bath. The water should be neither hot nor cold, but for general use a temperature of from 85° to 95° Fahrenheit is preferable, and taken altogether is the most useful.

As soon as the individual "comes up out of the water" he should be at once quickly dried by rubbing briskly with a towel, and if he does this himself he gains another advantage, *i. e.*, by the exercise which assists the reaction that is so necessary.

SPONGE BATH.

This form of bathing can be of the most general application, and should be resorted to in the absence of the other modes at least every other day "the year round" by every man, women and child.

There is no excuse for neglecting personal cleanliness; let your position in life be ever so humble or your spare time ever so limited you can find time enough two or three times a week to devote five minutes to personal cleanliness. Cleanliness is next to godliness. Procure yourself a sponge, or if you have not the means to procure a sponge get an old towel or other bit of old cloth, or if you can not do this get two or three pints of water—God has given you that—and use the hands that he has also given you to wash the whole surface of your body. This ought to be repeated by every one once a day, and should by no means be neglected.

I know it is the custom of some persons to seldom if

ever bathe. I have known persons who were not wet "all over" once a year except by sweat or unless they were caught out in a rain storm. A stench would come up from their very clothing almost unbearable. Such persons rob themselves of a great luxury and the enjoyment of good health, while they subject those who have to come in close contact with them to a very great annovance. Can a man's heart, conscience and character be preserved pure while his body is a mass of stinking filth? Can a man be an acceptable Christian who neglects personal cleanliness? The very crowning act in the obedience of the gospel of Jesus Christ, and the one that changes a man's state—that takes him out of the kingdom of darkness and places him in the kingdom of light—the kingdom of God's dear Son, is performed in water, and ought to suggest cleanliness to the minds of all.

Nature revolts at the idea of filth; it is, unquestionably, a great source of human misery and disease. From filth arises our dangerous epidemics. Cholera, that terror to the human race, took its rise in the delta of the Ganges from filth; it has ravaged every country on the globe, disseminated by filth, carrying destruction and dismay every where. To enumerate the diseases and woes to the human family by filth would transcend my bounds. All skin diseases have their origin in a filthy condition of the skin. The minute vessels called the pores become obstructed by an accumulation of matters that ought to have been washed off, and disease is the consequence. In short, cleanliness is one of God's laws, and can no more be violated with impunity than can his law of gravitation. Who would expect to fall from the top of a three-story house without injury, thus violating the law of gravity? Who can expect to violate the laws of cleanliness and not suffer a severe penalty? As certainly as the peal of thunder follows the flash of lightning will the penalty for filth come.

ANATOMY AND PHYSIOLOGY.

A CONDENSED REFERENCE.

OUTLINES.

It is my design under this head to give a brief outline of the structure and organs of the body. Within the compass of this work it will not be possible to enter to any great extent into detail, but enough will be presented to give the reader a general knowledge of *Anatomy* and of the organs which constitute the human system. As far as the use of technicalities are concerned, in giving the names of many of the bones and other parts, I have to use them here, as I know no other names, and these names are arbitrary and express the use, shape, &c., &c. But I will try to explain them so that no one will fail to understand.

THE SKELETON

Is divided into the head, trunk and extremities.

EIGHT BONES OF THE SKULL.

Os Frontis.—This bone constitutes the forehead.

Ossa Parietalia.—Sides of the head above the ears.

Os Occipitis.—The back and lower portion of the skull.

Ossa Temporum.—Bones of the temple.

Os Ethmoides.—Bones situated between the root of the nose and the brain.

Os Sphenoides.—The base of the skull.

FOURTEEN BONES OF THE FACE.

Ossa Maxillaria Superiora.—The two bones of the upper jaw.

Ossa Malarum.—Cheek bones.

Ossa Nasi.—The two bones which form the arch of the nose.

Ossa Lachrymalia.—Situated within the inner angle of the eye.

Ossa Palatina.—In the posterior portion of the roof of the mouth.

Ossa Turbinata.—Interior bones of the nostril.

Inferior Maxillary.—Lower jaw.

Os Vomer.—Partition of the nose.

THE TEETH.

In the adult there are thirty-two teeth, consisting of eight *incisors* or front teeth, four *cuspidetes* or eye teeth, eight *bicuspides* or small double teeth, eight *molares* or large double teeth, and four *sapientiæ* or wisdom teeth.

THE TONGUE

Contains one bone, which resembles in shape the letter U and is termed the os hyoides.

EIGHT BONES IN THE EAR.

Malleus, Incus, Stapes and Orbicularia.

FIFTY-FOUR BONES IN THE TRUNK.

Twenty-four of the Spine.—Termed vertebræ. These are divided into seven cervical, twelve dorsal and five lumbar vertebræ; one sternum or breast bone.

TWENTY-FOUR RIBS,

Of which the five lower ones are termed, *false* on each side, and the seven upper ones *true*.

FOUR BONES OF THE PELVIS.

The sacrum and coccyx behind on the median line, and the two ilia on each side uniting before.

SIXTY-FOUR BONES OF THE UPPER EXTREMITIES.

Clavicula or collar bone, scapulæ or shoulder blade, ossa humeri, bones of the arm between the shoulder and elbow, two ulna and two radii bones between the elbow and wrist. In each wrist or carpus are eight bones, in the palm of the hand are five metacarpal bones, and twenty-eight form the fingers, termed collectively phalanges.

SIXTY BONES OF THE INFERIOR EXTREMITIES.

Ossa femoris, thigh bones; patella, knee bones; fibula, outside bones between the knee and ankle; tibia, bones of the shin, two of each. At the instep are five bones—os calcis, or heel bone; os astralagus, part of the ankle joint; os cuboides, square bone; os nabiculare, bone resembling a boat, and os cuneiformia, wedge-like; ten metatarsi, or foundation of the toes.

In the toes twenty-eight *phalanges—Sesamoides*, or bones occasionally found in the feet and hands, numbering eight. *Total number of bones*, 251.

THE MUSCLES.

It is difficult to give the exact number of the muscles, as different standard works do not agree as to the number; this arises from the fact that they do not agree as to what are in reality muscles, some denominating parts as muscles that others do not. The number may be set down at about 500. They are sometimes divided into voluntary and involuntary. The voluntary muscles act in accordance with the will, and it is by these we are enabled to command our movements, as walking, dancing, leaping and in moving various parts of the body.

On the contrary, over the others the will exercises no control, as, for instance, the will possesses no power over the muscular action of the heart.

The muscles consist of fibres disposed of in bundles, which are easily distinguished with the eye; these are divisible into smaller ones, and again are capable of being divided into smaller, &c. The fleshy substance is the muscular portion.

The muscles by which the arm or leg is made to bend are termed *flexors*, and those which exercise an antagonistic influence or opposite action, *extensors*.

That portion of a muscle which is attached to a part the most fixed is the *origin*, so termed, and that which is affixed to a part more movable, is the *insertion* of the muscle.

THE ORGANS.

A BRIEF DESCRIPTION, BEGINNING WITH

THE BRAIN.

This organ is divided into the cerebrum, or the great brain, and the cerebellum, or little brain. The cerebrum occupies all that portion of the skull above the level of the ears, and the cerebellum is situated below the level, and occupies the lower and posterior portion. A thin membrane, stretched tightly, constitutes the partition between the two; and its being thus tense is to prevent the cerebrum, from its superior weight, from pressing against the cerebellum, and thereby obstructing its function. The cerebrum is divided into right and left hemispheres, and these hemispheres again into six lobes, two anterior, two middle and two posterior. The cerebellum is divided into right and left lobes. In the brain originate NINE PAIRS OF NERVES and the spinal marrow, from which arise THIRTY ONE PAIRS OF NERVES, by whose

means the various senses, as seeing, hearing, tasting, smelling and perception are performed and muscular action given. These nerves, like so many telegraph wires, convey all impressions to the general office—the brain, where they are stamped upon that organ, which is the seat of intellect; the nerves are the avenues to it—all intelligence must come by and through them.

The brain is the seat of our intellectual nature, while the heart is the seat of our emotional nature. But the impression that creates the emotions must come first to the brain, through the five senses, by the nerves and make the impress on the brain, and then the heart or emotional nature is acted upon. I have neither time nor space to develop this interesting subject, but must proceed to notice the

LUNGS.

These organs are situated in the cavity of the chest, and constitute the breathing apparatus. The right lung is divided into three lobes, and the left into two. The upper portion of the lungs is attached to the neck by means of the tracha or wind pipe, and to the heart by the pulmonary arteries.

The air cells of the lungs, which resemble, to some extent, the comb of the honey bee, are supplied with air by means of the bronchial vessels, which extend throughout the various portions of the organ, terminating in the former. They are also surrounded by a membraneous covering termed the *pleura*. The lungs are the organs implicated in consumption, and are more or less influenced or diseased in pleurisy and pneumonia, particularly the latter.

THE HEART.

The heart is an organ situated in the left cavity of the chest, resting on the diaphragm or midriff, to the left of the

sternum or breast bone, between the fifth and sixth ribs. It is contained in a strong membraneous sac termed the pericardium, which secures it in its proper situation. It is divided into four cavities, termed the auricles and ventricles. It continually contracts and dilates, and at each pulsation throws the blood to every part of the body with amazing velocity. The number of its contractions in a single day is computed to be one hundred thousand. Plato, in speaking of the heart, remarks: "It is the centre or pivot of the blood vessels—the spring or fountain of the blood which is carried impetuously around." The blood is the pabulum or food of the flesh, and, for the purpose of nourishment, the body is laid out in canals, like those which are drawn through gardens, that the blood may be conveyed, as from a fountain, to every part of the body. The heart contracts and throws the blood into the lungs to be vitalized; from the lungs it is carried back into the left side of the heart; the heart contracts and throws this renovated blood into the arteries, and by them it is carried all over the body to nourish After it has thus circulated all over the body it is returned by the veins to the right side of the heart, where it is poured into the heart, mixed with the chyle, again sent to the lungs and prepared to go the rounds. All the blood in the body, which amounts to three or four gallons, passes through the heart on its way to and from the lungs every four minutes. "The fool hath said in his heart, there is no God." Who but a fool or a lunatic, after examining the structure of the heart alone and the circulation of the blood through it, can doubt the existence of its maker, God.

THE STOMACH.

The stomach is a membranous, muscular sac, a greater portion of which is situated in the left side of the abdo-

men, mostly under the diaphragm and the ribs. It reaches toward the right side, a little beyond the "pit of the stomach," as it is termed. It resembles in shape the Scotch bag-pipe. The place where the food enters is called the cardiac orifice. This name was given it by the ancients because they thought it very near the heart. The outlet is called the pyloric, which closes and prevents the entrance of improper articles into the intestines. It is supplied with numerous glands, blood vessels and nerves. It has three coats: the external is the peritoneal, the second is the *muscular*, and the third and inner coat is mucous or villous, which contains numerous absorbing and exhaling vessels, which secrete the fluids in digestion. The sympathy of the stomach with other organs renders it one of the most important parts of the body; it is the great centre of sympathy. The great sympathetic nerve leads from the brain to the stomach, which effects so many contiguous portions of the system when it is disordered. Nutrition depends upon the stomach, as also does innervation, to some extent, for a full description of which the reader is referred to the article under that head.

THE LIVER.

This organ is the heaviest glandular viscus in the body, upon the integrity of which depends, to a considerable extent, the health of many of the organs. It is divided into right and left lobes. The right or largest lobe is situated immediately under and below the false ribs, and the left over a portion of the stomach, in the epigastric region. The use of the liver is to secrete bile, and it also exercises no inconsiderable influence over the digestive process.

THE GALL BLADDER

Is an oblong, membranous sac, situated under and attached to the liver in the right hypocondrium. It is the receptacle of the bile carried to it and secreted by the liver, and discharges it by a small duct into the duodenum, just below the *pyloric* orifice, which, it will be recollected, is the outlet of the stomach.

PANCREAS.

This gland is vulgarly known when found in the hog as sweet bread; it is situated immediately between the stomach and spine, at right angles with the latter. The pancreatic juice is secreted by the pancreas, and unites with the chyle in the duodenum. It assists in the process of digestion.

SPLEEN.

The spleen is a spongy, livid viscus, and so variable is it at different times and under different circumstances that it is a matter somewhat difficult to determine accurately either its shape or situation. It will, however, generally be found between the eleventh and twelfth ribs in the left hypocondrium. In shape it is oblong and round, or resembling an oval. It is said to be larger when the stomach is empty, and smaller when the stomach is full, by which it is compressed. There is much speculation even now about the use and functions of the spleen. I will not attempt to notice any of them; it is most likely that it plays some part in digestion.

KIDNEYS.

The kidneys are situated each side of the spine, in the lumbar region or small of the back, being in shape something like a bean.

The use of these organs are for the secretion of urine. Near the middle of the kidneys, at the extremities of the blood vessels, is a funnel shaped sac, termed the pelvis, forming a passage to the bladder, which it perforates obliquely. This passage or canal from the kidneys to the bladder is termed *ureter*.

BLADDER.

The bladder is a membranous pouch, situated back of the ossa pubis in the pelvis, in the lower portion of the abdomen, possessing the power of expansion and contraction. Its figure is that of an oval, being rounder above than below when empty, but when full is broader below than above. The urine is received in this organ by means of the ureter, and is expelled from thence by the voluntary action of the muscular fibres.

INTESTINES.

By the intestines is meant the whole of the alimentary canal below the stomach. They are divided into small and large. The small are subdivided into the duodenum, the jejunum, and the ileum, the large into the cacum, the colon and the rectum. They are coiled up, or lie in folds in the abdomen, and extend about thirty feet in length. Those who depend upon emetics to cleanse this vast extent, or upon injections, must be doomed to disappointment. And when we take into consideration the tenderness of this delicate mucous membrane, we almost shudder at the thought of drastic cathartics being repeated from day to day, as is the habit of some of our misguided "heroic" practitioners. In this lies the secret of so many diseases "running into dysentery;" this delicate membrane is inflamed by the use of their medicines, hence nature finds herself (instead of being assisted and sustained so as to resist and combat successfully the disease that is preying upon her) encumbered with another disease often more formidable than the original.

The coats of the intestines are similar to those of the stomach. The muscular coats contain longitudinal and circular fibres, which, by their contraction and relaxation, produce vermicular or peristaltic motion, compared to the creeping of a worm. These serve to propel the contents of the intestines out of the body. The small intestines assist in the preparation of the chyle and propel their contents toward the great intestines. The proper use of the intestines is to serve for the performance of chylification, for the absorption of the nutritive chyle, and as a reservoir for the indigestible residue of the food and an outlet for both it and the effete matter which require to be thrown out of the general system. The bowels or intestines, as well as the stomach, exercise a great influence in the grand process of "nutrition." The

LACTEAL VESSELS,

Clear and delicate, arise from the mucous coat of the small intestines, passing in their course through small glands and terminating in the thoracic duct. Their office is to absorb the milky fluid or chyle from the food and to convey it from the intestines to the blood. Lymphatics take up fluids from the different cavities and parts of the body and convey them into the circulation. The lacteals, mesenteric glands and the thoracic duct are all engaged in this important and beautiful process. The lacteal vessels are most easily seen an hour or two after a meal, because they are then fully distended with chyle, even in their smaller branches. The latter, indeed, may then be distinctly traced proceeding from the

different portions of intestines and gradually coalescing into larger trunks.

THE SKIN.

The skin is a smooth, delicate, external membrane which forms the beautiful covering of the whole body. It is the last stroke of the great artist which gives the finishing touch and makes the form divine. It is very superficial, and without it, or if removed, the most disgusting or revolting spectacle would be presented: hence it is said that "beauty is but skin deep." First is the scarf skin, being the exterior part, insensible and rough. It is this which is raised in blisters, it is constantly wearing off, and is often renewed. Next to this is a very thin layer of paste, called rele mucosum, and on this depends the color. In the African this membrane or paste is jet black; in the Indian, copper colored; in the Spanish, yellow; and in our race, white, which is ridiculed in Africa as being pale and homely, they considering their color the standard of beauty. The third and last coat is the true skin, which is thicker than the others, and lies next to the muscles. It is freely supplied with blood vessels and nerves. The color of this membrane—the true skin —is nearly the same in all races of men, being as white in the African as the European or American.

The skin performs a most important function in the animal economy. Two-thirds of the fluids taken into the stomach pass off by the skin. It has an infinite number of pores, which are designed to carry off extraneous and hurtful fluids from the blood; and hence, when they are obstructed, so many diseases follow, by a knowledge of which we learn the true remedy, viz.: to restore its secretions, sustain the system and eliminate the poison. It is owing to this physiological view that we are led to

bathe thoroughly the whole surface, in fever and other diseases. I wish to impress this thing upon the mind of every reader, that the skin must be kept healthy and clean; the pores must be kept open or the whole system will suffer.

GLANDS

Are organic substances, composed of blood vessels, nerves and absorbents, their use being to secrete or alter some peculiar fluid. They are generally divided by anatomists according to shape and structure or the fluid secreted.

They are also divided into four classes, viz.: simple, compounds of simple, conglobate and conglomerate glands, which terms only apply to their *fabric*. Again they are divided into mucous, sebaceous, lymphatic, salival and lachrymal glands. The *duct* by which the fluid is transmitted is termed the *excretory duct*.

The vessels and nerves of a gland always come from the neighboring parts, and the arteries are possessed of a high degree of irritability. The use of the glands is to separate a certain fluid or to change it.

MEMBRANE.

A thin substance, expansive, which is composed of cellular texture, having the elastic fibres delicately interwoven, which allows of a great degree of pliability. The membranes may be found in various parts of the body, as the *pleura*, *dura-mater*, *diaphragm*, skin, &c. Independent of particular membranes are those named from a particular locality; they are usually divided into serous, mucous and cellular.

THE SEROUS MEMBRANE

Lines the internal surface of the skull and serves to protect the brain; it also is the covering of the stomach and intestines, and surrounds the lungs.

THE MUCOUS MEMBRANE

Lines the internal surface of the stomach, lungs, intestines, bladder, eyelids, nose, mouth, &c., and is so termed from its secreting a whitish, slimy fluid, called mucous.

THE CELLULAR MEMBRANE

Is a cellular tissue, is composed of a great number of little cells, and is the connecting medium of every part of the body. It is found occupying the space between the muscles, thus filling up those portions which would otherwise be irregular and uneven. The cellular texture thus connects the muscular portions without interfering in the least with their natural functions.

THE WOMB.

The uterus or womb is an organ in the female about the size and shape of a pear, and is situated between the bladder and rectum, which secretes the catamenial fluid. It is suspended and kept in its place by means of ligaments. In this organ the fœtus or infant is formed. After the ovule in the ovary has been fecundated or vitalized by the spermatazoa of the male it is carried into the womb by the follopian tubes, where it is nourished by the blood derived from the mother through the umbillical cord or navel-string, till in nine months the womb contracts and expels it.

ARTERIES.

The arteries are strong, elastic, membranous tubes, which arise from the heart by two trunks, and convey the blood, by their innumerable branches, to every part of the body. They have three coats.

VEINS.

After the blood has been thus carried to every part of the system by the arteries the latter terminate in small vessels called *capillaries*, because they resemble hairs, being so extremely small—they are smaller than hairs. These form the intermediate link between the *arteries* and the *veins*. The veins take their rise from these and return the blood to the heart.

THE BLOOD.

A red fluid, of saltish taste, which circulates in the heart, arteries and veins. It is the most important fluid in the body, and affords an interesting theme for the medical student. It is the source of heat, and by its flow in an undue proportion to any part the most dangerous conditions are produced, and often death. It furnishes materials from which all the parts of the body are supplied. Strength, health and life depend upon it, and the loss of a small quantity often damages the system. It stimulates the heart to contractions. It is thought by some to be the life principle. In the arteries it is of a crimson color; in the veins, dark. It is changed in its passage through the lungs.

THE NERVES.

These are contractile bundles of white cords, the ends connected to the brain or spinal marrow, and thence extended over the whole body to receive impressions from external objects or to convey muscular motion. They are in pairs, issuing out of each side of the spine and thence to every part of the body, so that you can not touch any part of the skin with the point of a pin without coming in contact with a nerve and a blood vessel. The great sympathetic nerve is the most important of all. The main trunk of it communicates with all the spinal nerves and several of those of the brain. It presides over all the organs which are affected independent of the will.

DEFINITION OF DISEASES, AND NAMES.

"The attempt to define 'disease' must be a failure," says Reynolds, "until we are possessed of a satisfactory definition of 'health,' and we are not likely to arrive at this possession until we are able to define the idea that we entertain of the still more fundamental fact of 'life.' Yet some attempt at a definition is not only important, but even essential for the work set before us, inasmuch as the general ideas entertained about disease vary as the years pass on, and the position of 'medicine' in the 'system of the sciences' is not only expressed by the approximative definition that we frame of disease, but is actually determined by the principle or idea which such definition is constructed to convey.

"If we regard disease in the abstract, we have to deal with that which changes, fetters, renders painful or puts an end to life; and from this point of view disease may be defined to be any condition of the organisms which limits life in either its powers, enjoyments or duration. We need not stop to discuss the many futile essays that have been made to define that which transcends definition, but which we all more or less accurately understand by life. We accept it as a fact, of which we all know much, but of which we are all assured by what we do know that there is much more that we do not know; for it goes beyond our observation, not only at its beginning and its end, but in its middle term, where it is the

most—but even then only partially—exposed to both our senses and our consciousness.

"If we consider disease from a less elevated point and deal with it as a fact of daily experience, we come to regard it as any departure from the structure or functions of the body as those are shown to us in health, and may define it to be an abnormal condition of function or structure, or both. But if we contemplate disease in relation to its many 'names' by which its various forms are recognized, we have a complicated problem with which to deal, and can only solve it by endeavoring to separate that which is common to all phases of ill-health from that which is peculiar to the various names by which those phases may be known, but by which they are only imperfectly expressed. And in order to do this we must call some typical examples of those names. A patient may be described as suffering from, or he may be said to be an example of, the disease called inflammation of the lungs, whooping-cough, tuberculosis, anæmia, typhoid fever, hysteria, or of some other malady which would or would not readily fall into one or the other of these categories. And be it observed that by this term 'inflammation of the lung' is expressed a particular kind of change in one organ of the body; by 'whooping-cough' is meant a special and characteristic variety of symptoms common to many very different affections; by tuberculosis is intended some general change in the whole body distinguished from other general changes by its association with the appearance in one, two or many organs of a particular material known as tubercle; by 'anæmia' is understood literally only an absence or deficiency of blood, but generally an alteration of quality rather than of quantity; by 'typhoid fever' is conveyed the idea of a change of a particular type in the whole organism, and one which is produced by the introduction into the body of a poison from without; while by 'hysteria' and similar phrases is conveyed some meaning or none at all, and when the former, a meaning as various in character as are the individuals who use the word. There are other principles upon which disease has been named and by which it is now described, but these examples are sufficient to show by their very existence the varying prevalence, at different periods, of diverse theories about disease; about the one organ to the whole system of organs; the nature of the changes which different organs may undergo; the value of particular functional alterations and of special symptoms; the relation of the blood to life and to the tissues of the body; the lien between certain materials we can see and some general conditions we can appreciate by their effect on life; the position in which life functions stand to the various poisonous agencies around them and within them, and the concealments by patent facts of little moment by important conditions which may be inferred to be their cause."

Thus the history of a science might be shown to be written in the names by which the objects about which it is concerned have been described and recognized, but such is not the end now in view; it is to show that the principles upon which disease has been named have varied widely, not only at different periods, but at the same time; and that so great is the diversity among them, and so strangely aberrant are the forms which disease sometimes assumes, that hitherto no self-consistent and at the same time practical nosology has been derived; and that, therefore, it is thought better in this work to retain old names that are understood, although based upon doubtful, if not erroneous pathology, rather

than, as a general thing, to invent new terms which would not be well understood, and would, perhaps, partake of many of the faults of their predecessors. I have, therefore, only invented a few names, such as "exudation of the liquor sanguinis" for inflammation, and "rheumateed myositis" for muscular rheumatism, &c., all of which have been properly explained as they have occurred. Therefore we accept gradually a nosology of the most complex composition with the tacit or expressed admission on all hands, that by "pneumonia" much is meant beyond the particular condition of the lung; that it implies changes antecedent to itself in the general nutrition of the body, and alterations in all the tissues and in their processes when the disease itself appears; that the words "whooping-cough" convey more than is included in a particular variety of cough which is characterized by a whooping sound, viz.: the well known history and social relationship of a disease altogether distinct from the paroxysmal cough and whooping sounds not rarely met with in cases of chronic bronchitis and emphysema; that by "tuberculosis" is intended a condition as well marked by general as by local changes, and, probably, dependent upon some constitutional vice which determines, and is not determined by, the special form of local changes; that by "anæmia" is meant much more than the etymology of the word can convey; that by "typhoid fever" is intended the description of a disease having relationship only very inadequately expressed by the words in common usage to denote it; and that by 'hysteria' and similar expressions are understood more than the present state of medical science will explain, and much more than the words themselves accurately define. In this state of medical nomenclature and of medical science, as represented by the names it sanctions, it is

difficult to arrive at any other definition of disease than that it is the sum total of morbid changes in both function and structure: and we must further admit that the names by which diseases are recognized are somewhat arbitrary terms, used for the purpose of recognition, without any constant value as to the meaning of those words in a system of pathology. Sometimes the name expresses what is believed to be the essential or most important fact; sometimes the first link in a long chain of causes and effects; sometimes a characteristic symptom or group of symptoms; sometimes an idea as to how the disease originated; and sometimes such a negation of all theory as contents itself with words which shall be understood to mean certain things to which they bear no more pathological relation, although they may have more seeming scientific value, than the common algebraical expressions for "unknown quantities," x, y, z.

From this point of view, therefore, disease is defined to be the sum total of changes from a condition of health which may be recognized in either function or structure, or both, and the names of diseases are held to be merely convenient expressions for their recognition.

STRUCTURAL AND FUNCTIONAL DISEASE.

In describing the elements of what we call disease, two terms have been frequently used, "structure" and "function." These two phrases have passed into general use; the later, however, is somewhat objectionable, as its existence may be doubted.

SYMPTOMS OF DISEASE.

"The meaning which now we must assign to the word 'symptom' or 'sign' of disease is very different from that which some time ago would be conveyed by those terms," says Dr. Reynolds. So long as disease was regarded as

something put into, added to or engrafted upon the body. a material or other entity having even a more or less substantive existence, these words described the means by which we might recognize the presence of such an entity; but so soon as disease is recognised to be what we have defined it, the sum of changes in function and structure presented by the living being, the "symptom" and "sign" have another meaning, and describe only those parts of the disease which are appreciable by others. Disease is a complex state of complicated organism, and although the name which we may give it may be intended to express its primary or most important fact, we can not separate this one fact from others with which it is associated, but must regard them as integral parts we have either to study or to treat. They may differ, from an outside point of view, in proximity of relationship, but the heat of skin, the altered pulse, respiration ratio, the nature of the expectoration, the change in the secretions, in the nervous system and in the prospects of life, together with the altered resonance, breath and voice-sounds are as much parts of the disease called "pneumonia" as is the structural condition of the lung. Some of them may be signs by which we recognize its presence, but they are also essential elements of the malady itself. In like manner it might be shown with regard to those other diseases, the nomenclature of which differ as those we have already described, that a precisely similar relation exists between what we have denominated "symptoms" and what we understand by "disease." We can not know of the existence, during life, of any disease except by its symptoms; we can not conceive of disease apart from some recognizable changes in either function or structure, and these changes constitute the disease; nor can we, on the other hand, imagine

the existence of what we call "symptoms" apart from the correlative idea of what we conceive to be "disease." The two classes of notion have been, of necessity, distinct in their development, but the maintenance of distinction between them has been a hindrance to true progress in pathology, and it will be well for us to try and remove that hindrance. So long as "disease" is thought of as a something—it matters not what—distinct from the phenomena or "symptoms" by which it makes itself known, so long are we in danger of mistaking its real meaning and overlooking those true guides toward the removal or alleviation of its evil, an end to which all medical science ultimately points.

PRINCIPLES OF MEDICINE.

ALL DISEASES DIVIDED INTO TWO GREAT CLASSES: NUTRITION AND INNERVATION.

Every animated being has a limited period of existence, during which it is constantly undergoing a change. long, however, as this change takes place uniformly in the different parts of which it is composed its physiological or healthy condition is preserved. But immediately the action of one organ becomes excessive or weak in proportion to the others, disease or a pathological state is occasioned. This state may be induced by direct mechanical violence, but may also occur from the continued or irregular influence of several physical agents upon the body, such as temperature, moisture or dryness, certain qualities of the atmosphere, kinds of food, etc. These are always acting upon the vital powers of the individual as a whole, as well as incessantly stimulating the various organs to perform their functions. Life, then, may be defined, in the words of Beclard, as "organization in action." Health is the regular or normal, and disease the disturbed or abnormal condition of that action.

While such may be assumed to be our notion of disease in the abstract, what constitutes disease in particular has been much disputed. From the time of Hippocrates to that of Cullen and his followers the external manifestation or symptoms constituted the only means of recognizing diseased action, and gradually came to be regarded as the disease itself.

Then these symptoms were arranged into groups, divided, subdivided and named according to the predominance of one or more of them, or the mode in which they presented themselves. These artificial arrangements are the nosclogies of former writers. All philosophical physicians, however, have recognized that the true end of medical inquiry is, if possible, to determine rather the altered condition of the organs which produce the disordered function than to be contented with the study of the effects it occasions. But the difficulty of this inquiry has been so great, and a knowledge of the means of prosecuting it so limited, that it is only within the last quarter of a century that medicine has been able to build up for herself anything like a solid scientific foundation. What has hitherto been accomplished in this way has been brought about by the conjoined cultivation of morbid anatomy, pathology and clinical observation, greatly assisted, however, by the advance of numerous collateral branches of science, and especially in recent times by chemical and histological investigation. The result has been a complete overthrow of nosological systems. We now attempt to trace all maladies to their organic cause; and just in proportion as this has been successfully accomplished has medicine become less empirical and more exact. The organic changes, however, which produce or accompany many diseases have not yet been discovered, and, consequently, a classification of all maladies on this basis can not be strictly carried out. The organic cause of epilepsy, hydrophobia, and of many fevers, for example, is as yet unknown. In the present state of medicine, therefore, when the morbid change in an organ is unequivocally the origin of the

symptoms, we employ the name of the lesion to designate the disease: but when there is disturbance of function without any obvious lesion of a part we still make use of the principal derangement to characterize the malady. Thus, as regards the stomach, we say a cancer or an ulcer of that viscus, and thereby express all the phenomena occasioned. But if we are unable to detect such cancer or ulcer, we denominate the affection after its leading symptom, dyspepsia, or difficulty of digestion. In endeavoring to carry out this distinction. however, modern physicians have fallen into a great error, inasmuch as they have continued to employ the nomenclature of our forefathers, and use words simply expressive of the presence of symptoms to indicate the altered condition of organs which are the cause of those symptoms. Formerly the term inflammation meant the existence of pain, heat, redness and swelling; it now represents to us certain changes in the nervous, vascular, and the texture of glandular and other organs and tissues, by congestion and the exudation of the liquor sanguinis. Formerly apoplexy meant sudden unconsciousness originating in the brain, now it is frequently used to express hemorrhage into an organ, and the terms apoplexy of the lung and of the spinal cord. The two ideas are essentially distinct, and bear no reference to each other, because the same word may be, and often is, employed under circumstances where its original meaning is altogether inapplicable. Hence it is incumbent on every one who applies to organic changes terms which have been long employed in medicine to define exactly what he means by them. In this way old, indefinite expressions, though still retained, will have a more precise meaning attached to them. If, for instance, it be asserted that bleeding cuts

short an inflammation, let it be explained what is cut short—whether the symptoms, the physical signs, a congestion of the vessels, or an exudation of the liquor sanguinis.

But, notwithstanding the confusion in our nosological systems and the frequent change of ideas with regard to the nature of morbid actions which have necessarily resulted from the rapid advance of medicine in late years, it still follows that disease is only an alteration in the healthy function of organs. Hence all scientific classification of maladies must be founded on physiology, which teaches us the laws that regulate those functions; therefore I venture to divide all diseases into two great classes—diseases of nutrition and diseases of innervation.

GENERAL LAW OF NUTRITION

AND OF INNERVATION IN HEALTH AND DISEASE.

The origin of disease has been ascribed by some to an altered condition of nutrition and of the blood, whilst others have regarded even this function as subservient to that of innervation. In man we find them united, and it is difficult at all times to tell what are purely nutritive and what are purely nervous phenomena. But a consideration of animated nature at large must satisfy us that in the vegetable world, as well as in some forms of animal life, nutrition may proceed independently of a nervous system. We also feel satisfied, in theory as well as in fact, the function of nutrition is capable of being separated from that of innervation. Doubtless, there is no lesion whatever which does not in the higher class of animals involve both nutritive and nervous changes; but the only method of arriving at a knowledge of their conjoint action, or the mutual influence, or the manner in which sometimes one predominates over or mingles with the other, is by studying in the first instance the laws by which each seem to be governed.

FUNCTION OF NUTRITION.

"The various modes in which nutrition becomes impaired and the blood diseased can only be understood by passing in review the different steps of the nutritive process. For ages medical men have been in the habit

of considering the blood to be the primary source of different maladies. It will be our endeavor to show, by an analysis of the process of nutrition, that the changes of the blood, and the diseases which accompany them, are, for the most part, not primary, but secondary—that is to say, they are dependent on previously existing circumstances, to the removal of which the medical practitioner must look for the means of curing his patient." He must second nature in her efforts to remove.

The process of nutrition in man consists of the introduction into the stomach and intestinal canal of appropriate alimentary matter or food, then the formation from these of a nutritive fluid, the blood, and the changes it undergoes in the lungs, the passage of fluid from the blood to be transformed into the tissues, the disappearance of the transformed tissues and their re-absorption into the blood, and the excretion of these effete matters from the body in various forms and by different channels.

These different stages comprehend not only growth, but the process of assimilation, absorption, secretion and excretion; and we believe it is only by understanding the function in this enlarged sense that we can obtain a correct explanation of those important affections which may appropriately be called diseases of nutrition.

The nutritive functions are all connected with one another, and excess or diminution of local growth, by subtracting from or adding to the constituents of the blood, must produce an alteration in that fluid both as to quantity and quality.

The process of nutrition is a continuous round, which in the natural world may be said to commence with the reception and terminate with the preparation of aliment, vegetable or animal; that this is observable not only in the chemical balance of organic nature, but in the inces-

sant chemical compositions and decompositions, as well as structural formations and disintegrations, which are peculiar to all vital entities.

We can now more readily understand how a derangement in any one stage of the nutritive process affects the others. Thus, if alimentary matter is not furnished in sufficient quantity and of a proper quality the blood is rendered abnormal, and it necessarily follows that the matters it gives off will be abnormal also, and its subsequent transformation is more or less modified. Again, if secretion be checked, the blood is not drained of its effete matter; and if excretion be prevented, the secretions themselves may enter the blood and act upon it as a poison.

A diseased or morbid state of the blood, therefore, may arise from either of the stages of nutrition which we have mentioned, being rendered irregular or otherwise abnormal.

In whatever part of the circle interruption takes place it will, if long continued, affect the whole. Thus, a bad assimilation of food produces through the blood bad secretions and excretions, whilst an accidental arrest of one of the latter reacts through the blood on the assimilating powers. The forms of disease thus arising may be endless, but as regards nutrition they may all be traced to the following causes:

First, An improper quantity or quality of the food.

Second, Circumstances preventing assimilation or impeding respiration.

Third, Altered quantity or quality of nutritive matters passing out of the blood.

Fourth, The accumulation of effete matters in the blood.

Fifth, Obstacles to the excretion of those from the body.

The principles I desire to call particular attention to and establish are, that diseases of nutrition and of the blood are only to be combated by an endeavor to restore the deranged process to their healthy state in the order in which they were impaired; that a knowledge of the process of nutrition is a preliminary step to the proper treatment of their affections; that the theory of acting directly on the blood is incorrect; and that an expectant system is as bad as a purely empirical one.

FUNCTION OF INNERVATION.

The function of innervation is also made up of the performance of various actions, widely different from each other, although associated together. These actions lead to the manifestations of intelligence, sensation and combined motion. But as the connection between these is not capable of exhibiting such an order of sequence as has been made apparent among the nutritive processes, we will not go into a lengthy description of it in this place; still all the functions of the nervous system may be increased, perverted or destroyed, according to the degree of stimulus or disease operating on its various parts. Thus, as a general rule, it may be said, that a slight stimulus produces increased or perverted action; whilst the same stimulus long continued or much augmented causes loss of function.

All the various stimuli, whether mechanical, chemical, electrical or physical (mental), produce the same effects and in different degrees. Circumstances influencing the heart's action, stimulating drinks or food act in a like manner. Thus, if we take the effects of alcoholic drink for the purpose of illustration, we observe that, as regards

combined movements, a slight amount causes increased vigor and activity in the muscular system. As the stimulus augments in intensity we see irregular movements occasioned, staggering and loss of control over the limbs.

Lastly, when the stimulus is excessive there is a complete inability to move, and the power of doing so is temporarily annihilated. With regard to sensibility and sensation, we observe cephalalgia, tingling and heat of skin, tinnitus aurium, confusion of vision, muscæ volitant, double sight, and lastly complete insensibility and coma. As regards intelligence, we observe at first a rapid flow of ideas, then confusion of mind, delirium, and lastly sopor and perfect unconsciousness. (Glorious drunk). In the same manner, pressure, mechanical irritation and the various organic diseases produce augmented, perverted or diminished function, according to the intensity of the stimuli supplied or amount of structure destroyed. Excess or diminution of stimuli, too much or too little blood, very violent or very weak cardiac contractions, and plethora or extreme exhaustion, will, so far as the nervous functions are concerned, produce similar alterations of motion, sensation and intelligence. Excessive hemorrhage causes muscular weakness, convulsions and loss of motor power, perversions of all the sensations, and lastly unconsciousness from syncope. Hence the general strength of the frame can not be judged of by nervous symptoms, although the treatment of them will be altogether different, according as the individual is robust or weak, has a full or small pulse, &c. similar effects on the nervous centres, from apparently such opposite exciting causes, can, it seems to me, only be explained by the peculiarity of the circulation. A change of circulation within the cranium takes place, and, whether arterial or venous congestion occurs, pressure on some portion of the organ is equally the result. The importance of paying attention to this point in the treatment must be obvious.

THE SEAT OF DISEASE IN THE NERVOUS SYSTEM—INFLUENCE—THE NATURE AND SYMPTOMS.

It is a matter of very great importance to ascertain how far certitude in diagnosis may be arrived at and the seat of disease ascertained. As a general rule it may be said that diseases of the brain proper are more especially connected with perversion and alteration of the intelligence; whilst disease of the cranial portion of the spinal cord and base of the cranium are more particularly evinced by alterations of sensation and motion. In the vertebral portion of the cord the intensity of pain and of spasm, or else the want of conducting power necessary to sensation and voluntary motion, indicates the amount to which the motor and sensitive fibres are affected. Further than this we can scarcely generalize with prudence. The fatality of lesion affecting various parts of the nervous centres varies greatly. The hemispheres may be extensively diseased, often without injury to life, or even permanent alteration of function. Convulsions and paralysis are the common results of disease of the ganglia in the cranial or upper portion of the cord. The same results from lesion of the varolii. But if the medulla oblongata, where the eighth pair of nerves originates, be affected, or injury to this centre itself occur, it is almost always immediately fatal.

This is a "bird's eye" view of the nutritive and nervous functions, viewed separately, but it must be borne in mind that the physician has continually to do with their conjoint action. Indeed, the derangement of one order of functions exercises a constant influence over the

other, so that in every disease the effects of disordered nutrition are visible in perverted innervation, and the converse. Thus an improper quantity or quality of food produces sometimes excitement, at others dullness of intellect. Various articles of diet have been known to cause violent headache and different kinds of nervous phenomena; while starvation, if long continued, excites delirium, paroxysms of mania, and lastly, stupor. In children, derangement of the alimentary canal is the most common cause of spasm and convulsion, and in the aged it often leads to apoplexy and palsy. Again, impeded respiration, poverty of the blood, accumulation of effete matters in the system, suppressed secretions and obstructed excretions, are all accompanied or followed by disorders of innervation. On the other hand, the influence of the nervous system on nutrition is equally apparent. Syncope, and even death itself, have been occasioned by mental emotions. Anxiety and suppressed grief predispose to diseases of the stomach, and thereby to altered nutrition, terminating in various maladies. The reception of joyful or distressing intelligence, it is well known, invigorates or depresses the bodily energies. Various organs are excited to action by particular trains of thought or desires, and the countenance is reddened by modesty and blanched by fear. As a general rule, it may be said, while slight emotions increase the secretions, very violent ones, particularly if suppressed, completely suspend them, and are most dangerous to life. Direct mechanical injury to the large nervous trunk, in addition to causing paralysis, is now recognized, in some cases, to produce increased heat and redness in parts, often followed by exudation and ulceration. In chronic cases such paralysis leads to atrophy and withering of a limb or some other portion of the body. Very rarely injury of a great sympathetic trunk produces similar loss of nutrition without impairment of sensibility or emotion.

This is all I shall attempt to say now in regard to nutrition and innervation. In the symptoms and treatment of special diseases the principles now detailed will be constantly illustrated. The subject is one of vital importance, and need I add, of particular interest, as it lies at the foundation and origin of the disease; in either one or the other, or both, disease must have its origin. Hence to the medical student there is no subject that can present itself that is of more vital importance or interest, and I need not add, more instructive.

INFLAMMATION.

(EXUDATION.)

When a part becomes hot, red and painful it is said to be inflamed. It may be general or local. Inflammo, The disease is so called in consequence of the to burn. burning pain felt in a part affected with it. The name "inflammation" simply describes a symptom, and but one symptom—the heat. As a name for that symptom I do not object to it. But as a name for a pathological condition it seems to me to be vague, inaccurate and meaningless. The great fact that there is something in a name is continually being realized by the medical student. The old aphorism, that "a rose by another name would smell as sweet" is doubtless true, but is no argument to prove that it would be as readily recognized if called by another name. We want to use names that will convey an idea—names that will express or describe a thing or a condition. There is nothing that has added more to the confusion that exists to-day in the religious world than the reckless use of names—names that do not describe or express the condition of a true follower of Christ. Dying men and women look around them for a name that will connect them with a Savior, and in the 1000 names that are distributed throughout the universe they can scarcely find one. Names that do not describe a disease or are connected with a pathological condition only serve to create confusion. Inflammo, as above remarked, does not direct the mind to the pathological condition, but to one only of the symptoms; hence I object to it. But what is the disease, and what should it be called? In order to answer the question it will become necessary to examine the pathological condition. We find, first, the capillary vessels are narrowed and the blood flows through with greater rapidity; second, the same vessels become enlarged and the current of blood is slower, although even; third, the flow of blood becomes irregular; fourth, all motion of the blood ceases and the vessels appear fully distended; fifth and lastly, the liquor sanguinis (one of the constituents of the blood—not the red part) is exuded through the walls of the vessel, and sometimes there is extravasation of the red part (corpuscles) of the blood, owing to rupture of the capillaries. Thus we have in order the process. Inflammation was an expression created in the infancy of science altogether metaphorical, designed to represent a morbid state in which the parts appeared to burn. From the time of Hippocrates to that of Cullen and his followers the external manifestation or symptoms constituted the only means of recognizing diseased action, and gradually came to be regarded as the disease itself. Then these symptoms were arranged into groups, divided, subdivided and named according to the predominance of one or more of them. These artificial arrangements are the nosologies of former writers. In this way the prominent symptom (heat) was regarded as the disease and a name given it to express or describe the condition.

All philosophical physicians, however, have recognized that the true end of medical inquiry is, if possible, to determine rather the altered condition of the organs which produce the disordered function than to be contented with the study of the effect it occasions.

The term inflammation is so very vague and its interpretation so very arbitrary that it has really lost its value. It is like an old coin without an impression, which ought to be removed from circulation. But the question is still pertinent and presses for an answer. What should it be called? Exudation of the liquor sanguinis is a demonstrative fact and gives rise to a definite idea. Hence, for all scientific and practical purposes, the expression, exudation, may be substituted for that of inflammation. Since we have found a satisfactory term, our further investigation of the subject will be of

SIMPLE EXUDATION.

A clever writer says on that subject, "Simple exudation presents four principal forms. First, as it occurs on serous membranes, where it exhibits a finely fibrous structure, and has a strong tendency to be developed into molecular fibres; second, as it occurs on mucous membranes, or in areolar tissues, where it is generally converted into pus corpuscles; third, when it occurs in dense parenchymatous organs, such as the brain, where it assumes a granular form, and is associated with numerous compound granular corpuscles; fourth, as it is poured out after wounds or injuries, and occurs on granulating sores."

In this last case the superficial portion is transformed into pus corpuscles, while the deeper seated is converted, by means of nuclei and cells, into nucleus and cell fibres, which ultimately form the cicatrix.

It may be stated that congestion does not always produce exudation, or, in other words, the blood may be withdrawn before the vessels are exhausted, and then the damage done them simply by being put upon the stretch for a short time is scarcely felt; it is only when

the blood remains for some time in too great quantities in a part that the disagreeable symptoms are exhibited, the pain, redness and heat, or the exudation takes place. Thus, we may have congestion of the lungs, and not the pain and heat to any extent, or the exudation. The inflammation or exudation does not develop. But if the afflux of blood remains for any considerable time we do have them, and a very formidable disease—pneumonia. It is so with other organs, and, in fact, every part of the economy. Any part may receive a sudden accumulation of blood, and it may be withdrawn without producing the symptoms and before there is any exudation. No part, however, is subject to any exudation without being preceded by congestion.

The subject of inflammation is one of vast importance, and one that has elicited the attention of the medical fraternity from the days of the early fathers down to the present time. Theory after theory have rose and fell, and to-day the medical world stands divided on the important subject. I say important, and well I may, in view of the solemn fact that at least one half of the premature destruction of human life is attributable to it. It would not be profitable for me to go into any detailed account of these different and antagonistic theories. Facts are what we are in pursuit of-leading, practical facts—that will aid us at the bedside of the afflicted. Hence I will only mention briefly some of these erroneous theories. Some urge that it is an affection of the capillaries, others that it is an altered state of the nerves, while others claim it to be a change in the blood, and others still that it is a form of abnormal or irregular nutrition.

Causes—The causes that produce inflammation or exudation are numerous, among which may be enumerated cold, heat, bruises, wounds, poison, contagion, and in fact any thing that is calculated to produce an irritation. Any irritant applied to the capillary vessels causes them to contract and narrow. The blood is forced more rapidly through them, according to a principle of hydraulics. As they enlarge the blood flows slower, on the same principle; until it stops, exudation takes place—the disease is established.

SYMPTOMS.

The constitutional symptoms are fever and buffyness of the blood. Thus, if blood be drawn from a vein, it will exhibit, after standing and coagulating, "the buffy coat." From this appearance of the blood has arisen the mistaken idea that inflammation was a changed condition of the blood—mistaking effect for cause. Thus we can see at a glance the importance of reasoning from cause to effect, and effect to cause.

It is just so with the other symptoms that we have given—pain, redness and heat. They, instead of being inflammation, as some have averred, are simply effects of a cause or symptoms. Inflammation occasionally arises unexpectedly and from causes unknown. (I shall use the terms inflammation and exudation as synonymous). In other instances it will be found to have been produced by some mechanical or chemical irritant, or by cold, or some morbid poison in the system, or contagion.

It is said to be *acute* when it runs its course rapidly, and is attended with severe constitutional or local disturbance; *chronic*, when its phenomena are less strongly marked.

Subacute inflammation is marked by symptoms which are intermediate between acute and chronic, and which do not attain any great severity.

TERMINATIONS.—The terminations of inflammation are resolution or cure. This takes place when the blood is not allowed to remain in the part long enough to enfeeble the vessels or entirely exhaust them, so that they can not assume their normal condition as soon as the blood is withdrawn from the part; when the blood has remained until they are entirely exhausted there is an effusion of lymph exudation, and it must terminate in suppuration or gangrene.

"When the inflammatory action reaches a certain degree, the nervous and vascular systems become generally affected; the general derangement which ensues being spoken of as inflammatory or symptomatic fever, or as constitutional disturbance. This fever manifests itself by depression, chilliness followed by heat, frequency of pulse, headache and furred tongue, thirst and loss of appetite. Sometimes the chilliness amounts to shivering, and it is generally allowed that the onset of spontaneous inflammation is more frequently attended with rigors than that of inflammation to external injury."

If the inflammation goes on to suppuration, the commencement of this event is commonly marked by the occurrence of shivering, and the constitutional disturbance is then called *hectic fever*, the leading symptoms of which are frequency and weakness of pulse and alternations of chilliness with heat and flushing, followed by sweating, a gradual wasting of the body and daily increasing debility. The terminations of internal inflammation are sometimes suppuration and sometimes adhesion.

TREATMENT.—I can only give the general principles of the treatment of inflammation here. In the commencement the grand object will be to relieve, if possible, the congestion. If this can be done early the symptoms, pain, redness and heat, quickly disappear. This is called resolution or cure: but if those symptoms are fully developed and the exudation established, it is not possible to cut it short. Then our duty will be to guide the morbid process to a favorable termination, just in the same way as we do at present try to conduct cases of typhus, smallpox, scarlatina, &c., through their natural process without making heroic and injurious efforts to cut short the disease. The important point, then, for consideration is, how to accomplish these objects. I will, without stopping here to review the antiphlogistic regimen which has been relied upon so long, and which consists of low diet, blood letting, active purging, counterirritation, mercury and antimony, after offering a single objection to them, proceed to give what I conceive in my mind, and what experience has taught me at the bedside, to be the true course of treatment.

My objection to bleeding is, that general bleeding, unless carried to a very dangerous extent, will not diminish the amount of blood in an inflamed part; that bleeding will not render an impure blood pure; that depressing agents favor the extension of the morbid action and deprive the system of the power of rallying from the effects of the disease; that in many instances of inflammation there is depressed nervous power, an impaired action of the heart, and that in all cases a lowering plan of treatment is found to be a positive injury to the patient and to fearfully increase the list of mortality. Hence we discard the whole plan as one of the great errors in the practice of medicine, and treat inflammation on a plan the very opposite of it, *i. e.*, by supporting the vital powers instead of lowering them.

If there is much febrile excitement, quick pulse and heat, it will be well to give a saline cathartic, followed.

after its operation by full doses of Dover's powders. This is a valuable remedy; it not only eases pain, but is of incalculable value in its action on the skin. Every means must be used to assist the excretion of effete products. The bowels must be kept regular and soluble, the skin clean and free from all obstructions and the kidneys faithfully performing their work of secreting; this last may be done by the use of the sweet spirits of nitre in teaspoonful doses three or four times a day. The first indication, that of keeping the bowels soluble during the febrile excitement, can best be done by the use of citratized magnesia, or Seidlitz powders, or common Epsom salts; this, however, must not be continued longer than the febrile excitement is present. After this the bowels must only be kept regular, which may be done, if any agent is required at all, by the use of injections. The skin may be kept in good condition by the use of the Dover's powders and baths, either tepid, hot or cold, as seems the most comfortable and judicious in the mind of the practitioner. But during the whole time the diet of the patient must be light but nutritious, with plenty of cold drinks. All sources of irritation must be removed from the patient; the room must be well ventilated and kept at a temperature of about 60° Fahr. When the pulse becomes soft, good beef tea and nutriments are to be administered; and directly there are indications of weakness we may administer wine in quantities varying from four ounces to twenty in twenty-four hours. Good Scotch ale or porter may be used in the place of wine.

I have said that the diet should be light and nutritious, but "to give food when there is a perfect loathing of it is worse than useless; but," says Dr. Tanner, "we may advantageously give alcohol and wine to retard the destructive metamorphosis of tissue, to afford to the sys-

tem the elements for the generation of heat, to repair the nervous energies and to supply a stimulus to the nervous system." As the period or crisis approaches, Dr. Bennett's example may be followed, of giving a diuretic—spirits of nitric ether half a drachm, with or without ten drops of colchicum wine thrice daily, to favor the excretion of urates, while where a crisis occurs by sweating or diarrhea, care is to be taken not to check it in any way."

It may not be out of place to remark here with regard to mercury in the treatment of inflammation, that its virtues have been vastly overrated, and, in fact, that it seems highly probable that inflammatory disease will progress more favorably without the use of it than with it. Tartar emetic in small doses given with Dover's powders is of great advantage to the skin, and will prove a valuable auxiliary in the treatment of the disease.

I have an abiding faith in nature and its marvelous powers to protect itself against disease, to ward off some and to cure others, and by a process of its own bring others in the most speedy way to a favorable termination. Then, what is truly the office of a physician? Is it not clearly to assist nature to perform her work? Can we do this best by lowering the system, breaking down her powers, and rendering her less able to combat and withstand the attacks of the enemy? Certainly not; but it is clearly his duty to study in the great school of nature, understand her workings and her objects, and then furnish her the very best means at his command to assist her in her great work of curing disease. innate power is called vis natura medicatrix. Of itself it is sufficient to cure a great many diseases, and, in fact, often overcomes the effects and influences of improper remedies and cures the disease. It is a powerful principle, without which I fear but few bad cases, indeed. would ever be brought to a favorable termination. physician's duty is to study this great principle, and in all cases where it is unable to perform its work, to be able to assist it—be its ally in the movement against the common enemy, disease. The physician who does not study and properly appreciate this general principle can never be a successful one. Local means will be spoken of when we come to treat of local and special inflammations. To prevent or diminish the extent of an exudation we must adopt measures to overcome the dilatation of the capillaries, their distention with blood, and the attractive power which draws the liquor sanguinis into the surrounding textures. This is accomplished by local applications of cold and astringents, which stimulate the capillaries to contractions, and by soothing topical applications, such as warm fomentations, opiates, etc., which relieve the irritation of the nerves in the part. Blood letting, local or general, has long been supposed capable of meeting this indication, but, theoretically, it can no longer be defended.

When the exudation has coagulated it constitutes a foreign body, which either becomes organized or is removed by its dying. In the one case it acts as a blastema, in which cells are developed that ultimately break down, and so render it capable of being absorbed, which is called resolution, or they are converted into tissue that becomes permanent. In the other case it disintegrates slowly, constituting ulceration, or putrifies, forming moist gangrene, when it is separated from the economy in discharge as a slough. It is by regulating the formative power of the exudation that we check or favor resolution, and we can only do this by employing those means which lessen or advance cell growth in all living organ-

isms. Thus, locally, cold, dryness and pressure check, while heat, moisture and room for expansion favor growth. And as regards the general system, the increase or diminution of food, nutriments and stimuli, act for or against this object. Hence you can readily see the importance of nutriment or stimulants, or both, in the treatment of exudations. In order to favor excretion of the effete matters in the blood, purgatives, diaphoretics and diuretics will be found very useful.

The general indications now alluded to, of course, admit of infinite variations and modifications in individual cases, but I think will be found infinitely useful in the treatment of all *exudations* or inflammations.

I have briefly referred to the disease, its pathology, nature and treatment, and feel confident that the careful and honest student will find them correct in principle.

EXUDATION CAN NOT BE CUT SHORT.

I have said in the "treatment" of inflammation or exudation, that "if these symptoms are fully developed, and the exudation established, it is not possible to cut it short."

A few words more on this subject may not be considered out of place. First, because it is an impression among physicians and the people that by a certain course of treatment inflammation can, in almost any stage, be broken up. Hence means the most heroic are often resorted to; and when they fail (which certainly they must) the physician is blamed and charged with ignorance, while he concludes himself that he has failed to do his duty by not pursuing these heroic means to a greater extent, and all parties are dissatisfied. Second, because such means, in my opinion, must fearfully increase the mortality in that disease. Third, that

I may show that inflammation, when once formed or established, runs through a definite course, and also show what that course is, and that it is as much an impossibility to cut it short or check it in that course as it would be small-pox. Fourth, that the disease is one of more importance to the human family than any other, for it, doubtless, occasions at least one half of the premature deaths in the land.

A mere statement of the first, second and fourth propositions are enough, but the third admits of careful consideration, which I shall proceed to do briefly.

There was a time when the practitioner was as confident he could arrest or cut short a case of typhus or small-pox, measels or scarlatina, as he is now that he can a case of inflammation.

Apropos of typhus, you hear physicians now talk fluently about "breaking up" or "cutting short typhus," but the well informed make no such claims. No sooner would the thorough physician claim that he could cut short typhus or inflammation than he would that he could cut short small-pox or scarlatina. With regard to these has been established the principle: first, of prevention; and second, when this fails, of simply conducting them to a favorable termination. This rule ought to hold good with regard to internal inflammation or exudation, and I think it will be admitted, if I succeed in making it apparent, that when exudation is once formed it runs through a definite course, and also what that course is.

If we watch the natural progress of exudation in any of the textures of the body we can not fail to observe that it terminates in two ways: first, by vital changes of growth of different kinds in the exudation, constituting what have hitherto been called suppuration, adhesion, granulation, cicatrization, the healing process, &c.; and secondly, by death of the exudation, which, if rapid, putrifies, producing gangrene, or, if slow, disintegrates, causing ulceration.

Now, this first series of changes are not destructive, but formative and reparative. Suppuration especially should be looked upon as a kind of growth, which enables the exuded and coagulated blood-plasma to be rapidly broken up and eliminated from the economy. If so, instead of being checked, it should be encouraged as much as possible. Every thing that lowers the vital strength and weakens the economy must impede the nutritive process of growth, and tend, more or less, to a slow or rapid death of the exudation.

Blood letting especially has this tendency, and must, therefore, be wholly opposed to the rapid disappearance of inflammation.

If a bone is fractured, exudation occurs around the injured part and is poured out, which undergoes vital changes, whereby, ultimately, it is transformed into bone. If soft parts are destroyed or removed, the exudation poured out from the injured vessels undergoes other vital changes, whereby it is transformed into fibrous tissue, constituting, first, granulations, and then a cicatrix. After subcutaneous section of tendon, with separation of its extremities, the transformation is more perfect, producing, as in the case of bone, a growth exactly similar to the one which was injured. If a violent blow or injury has been received, a greater or less amount of exudation is infiltrated among the contused and torn tissues, which is transformed by cell growth into pus, which, if it can be evacuated externally, is soon got rid of, but if not, is, on the disintegration of the cells, absorbed and excreted from the economy. If,

under other circumstances, the pus is absorbed as rapidly as it is formed, the inflammatory swelling is said to be resolved or discussed; if not, it collects in the form of a fluid, and constitutes an abscess. Surely it can not be maintained that, in any of these cases, we can favor these separative processes by blood letting and lowering the strength of the economy? On the contrary, they have always been found to be best perfected in individuals of vigorous constitutions, whilst in scrofulous or broken down and weak persons, they proceed slowly or not at all.

But in internal inflammation, say of the lungs or pericardium, are the processes different? Certainly not. In the one case the exudation is converted into pus cells and absorbed, and in the other into fibrous texture, causing adhesions. But because these processes have been hid from view, physicians have supposed that instead of treating the inflamed parts, as the surgeon does, he ought to attack the general symptoms which result from the lesion. In cases of fracture and contusion there are also febrile symptoms, increased pulse, and so on. But does the surgeon imagine that callus will form better, or an abscess be resolved, or reach maturity sooner by general blood letting and antiphlogistics? Experience teaches him otherwise. In the same manner it may be most reasonably argued that such treatment can not favor the natural termination of internal exudations.

I will point out more particularly the changes which pneumonia goes through. In pneumonia the exudation is infiltrated into the air vesicles and minute bronchi, and between the fibrous blood vessels and nerves of the parenchyma, imprisoning the whole in a soft mass, which coagulates and renders the spongy texture of the lung more dense and heavy, or what is called *hepatized*.

This accomplished, no air can enter. The nerves are compressed; the circulation is in great part arrested; and the object of nature is now to convert the solid exudation once again into a fluid, whereby it can be partly evacuated from the bronchi, but principally re-absorbed into the blood and excreted from the economy. This is accomplished by cell growth. In the amorphous coagulated exudation granules are formed; around groups of these cell-walls are produced, and gradually the solid amorphous mass is converted into a fluid with cells. This is called pus. The cells, after passing through their natural life, die and break down, and thereby the exudation is again reduced to a condition susceptible of absorption through the vascular walls, and once more mingles with the blood, but in altered chemical condition.

In a pleurisy or a pericarditis the transformations occurring in the exudation are different. Let us follow them in the case of pericarditis. When a severe inflammation of the pericardium occurs the liquor sanguinis is exuded in considerable quantities, separating the serous layers to a greater or less extent. After a time the fibrin coagulates and forms a layer which attaches itself to the membrane, whilst the serum of the blood accumulates in the centre. The coagulated fibrin first assumes the form of molecular fibres, plastic or pizoid cells are formed in it, others throw out prolongations, so as by their union to form a plexus, which, communicating with the vessels below the serous membrane, renders the exudation vascular. Gradually the surface assumes the appearance of a villous membrane, which possesses also the absorbent functions of one.

The enlarged villi frequently contain vacuoles or spaces, reminding one strongly of the general structure of the placental tufts, than which nothing can be imag-

ined more perfectly adapted for the purpose of absorption. In consequence the serum now disappears, the two false membranes are brought in contact, and thus the absorption, as soon as it is no longer required, is put an end to and adhesion occurs. The matters absorbed into the blood pass through the same series of changes as those in pneumonia do, and are eliminated from the economy in a similar manner. Such is the natural progress of The two kinds of processes now described pericarditis. exhibit the same wise design in pathological as we everywhere find in physiological action. In vascular tissue of the lungs new blood vessels are unnecessary; but in the non-vascular serous membrane they must be formed to bring about removal of the morbid products. In the one case the entire exudation is transformed into cells to produce rapid disintegration and absorption, which latter is easily accomplished by the already formed numerous vessels of the lungs. In the other case the exuded liquor sanguinis is separated into solid and fluid parts, and as there are no vessels in the serous membrane, they are formed into one portion of the exudation to cause the absorption of the other. During the progress of those essentially vital acts and modes of growth and formations, how can it be supposed that lowering the strength by blood letting can influence these in any way except for the worse; that is to say, by weakening that power on which the transformations depend? Then, in exudation as well as in small-pox and typhus, we must not destroy the vital forces by trying to cut it short, but use the best means in our power to conduct it to a favorable termination. Let the mind be disabused in regard to the theory of cutting short an established internal inflammation; it is a phantom, a myth, the pursuit of which will always end in bitter disappointment.

While congestion may be, and often is, broken up, even after the heat and redness have appeared, the exudation has not taken place, hence the pathological condition meant by inflammation really has not been set up. In such cases exudation is prevented, not broken up. I repeat, that after it is once established it can not be broken up or cut short.

MALARIAL FEVERS.

OBSERVATIONS OF THE PECULIAR POISON WHICH PRODUCES THEM
—MALARIA THE PRODUCT OF ORGANIC DECOMPOSITION IN SOILS
—ITS EXISTENCE ASSUMED — WATER INDISPENSABLE TO THE
PROCESS—MALARIA GENERATED IN HARD ROCKS—MALARIA A
BLOOD POISON—IT IS GENERATED IN THE GREATEST ABUNDANCE
IN MARSHES.

The poison which gives a distinctive name to fevers with periodical returns is every where recognized by the term malaria.

Chemistry has not been successful yet in demonstrating the existence of malaria. Its existence is assumed from certain observed effects on the system or organism, just as we do in the case of other poisons which produce certain specific diseases. In this article it is intended only to briefly summarize the few facts relating to this poison which have been tolerably well ascertained.

Malaria is believed to be the product of organic decomposition in soils; whatever may happen to be their mineral composition, water is indispensable to the process, and a high temperature, although not absolutely necessary, greatly aids it. It is generated in greatest abundance in marshes which contain a high percentage of organic matter, hence the name by which it is familiarly known, viz. marsh miasm. It is also said to be generated in hard rocks, such as granite and trap, in a disintegrated state. "A notable example," says Dr. W. C. Maclean, "is the island of Hong Kong, which consists

entirely of weathered and decaying granite. In such soils, so long as they are undisturbed, the existence of malaria may not be suspected. In the case of Hong Kong, for example, it was not until extensive excavations were made into the disintegrating granite, for building purposes, that violent and fatal remittent fevers appeared." The air of marshes, known for ages as malarious, has been examined by chemists. Watery vapor and carbonic acid are always found in excess, and under certain conditions, sulphuretted hydrogen. And Parks says, "Carburetted hydrogen is often present, and occasionally free hydrogen and ammonia, and, it is said, phosphoretted hydrogen." Besides the above, "various vegetable matters and animals, floating in the air, are arrested when the air of marshes is drawn through water, or sulphuric acid and debris of plants, infusoria, insects, and even, it is said, small crustacea are found."

Malaria acts with the greatest intensity on the human system in situations which are low and moist, abounding in vegetation undergoing decomposition, e. g., in jungly districts, during or immediately after the rainy season, at the base of great mountain ranges and along the course of small rivers, particularly if their bottoms are low and covered with vegetation.

Malaria is capable of drifting along plains for a considerable distance from its source, particularly in the direction of the prevailing wind. It is said to ascend mountains, especially when favored by ravines and currents of air.

It is a common belief in India that water is capable of absorbing malaria, and that periodic fevers, dysentery and even cholera are produced by drinking water so charged. This absorbing power of water has quite a beneficial effect, particularly when a sufficient breadth of it is between our habitations and the source of the poison. Belts of trees, in like manner, exercise a protective influence.

Malaria disappears before cultivation and subsoil drainage, with free exposure of the soil to the action of the air and of living vegetation. When, however, the cultivating hand of man is withdrawn and the old conditions reappear, malaria again resumes its sway.

It is the cause of intermittent and remittent fevers and their sequels; it underlies the cause of dysentery and cholera, and by its depraving influence on the constitution it often silently undermines the health without the manifestation of any febrile phenomena.

When a person has for some time suffered from the toxic (poison) influence of miasm a curious impress of periodicity is sure to show itself in all his subsequent ailments, whatever be their nature; and "I believe," says Maclean, "from extensive observation, that this impress of periodicity in never eradicated."

Casorati, a late Italian physician of eminence, in his "Treatise on Intermittent Fevers," a posthumous work lately published, has given it as his opinion "that miasm is the cause of an extremely small number of intermittent fevers." He says that there are "pernicious intermittents, the origin of which is simply rheumatic." He further says that, within the sphere of his observation, "Nothing is more common than to see pregnant women the subjects of tertian fever, under which they frequently abort," and he gives numerous examples of disease, such as menorrhagia, cephalalgia, &c., &c., all presenting an intermittent type, due, as he supposes, not to the toxic effect of miasm, but to other causes, such as "humidity," "cold," and the like. The truth is that Casorati's sphere of clinical observation was in a malarial region; the

stamp of periodicity was therefore deeply impressed on a great number of the diseases that came under his care. The proof of this is not far to seek, for, by his own showing, no treatment was effective until quinine was given. "We do not find," says Maclean, "when there is no miasm to complicate the case, that 'acute rheumatism,' or 'menorrhagia,' or 'cephalalgia' derive benefit from anti-periodic remedies, still less that such are indispensable to all treatment." No sooner is the blood poisoned by malaria than it acts on the stomach and alimentary canal. In all agues, particularly of a severe type, there is, from the first, great disturbance of the stomach, and in severe remittents this is often the most prominent and urgent symptom. Casorati goes so far as to state that morbid appearances in the stomach constitute by far the most constant post mortem appearance found in fatal cases of intermittent fevers. Maclean gives it as his opinion that malaria is often the cause of dysentery, and says, "In the present state of knowledge it is not possible to explain why malaria should in one case cause dysentery, and act with intensity on the glandular structures and mucous membrane of the great intestine, and in another excite an intermittent or remittent fever, with signs of extreme irritation of the stomach and duodenum, going on often to structural changes in those parts." Chemistry may one day reveal to us some difference, at present inappreciable, in the constitution of miasmata, to account for the affinities displayed in the different cases. Cases occur sometimes that at first it is difficult to tell whether they are going to be dysentery or remit-The structural changes of a more secondary kind induced by malaria are enlargment of the spleen and liver.

INTERMITTENT FEVER—PERIODICAL FEVER—AGUE—PAL-UDAL FEVER—CHILLS AND FEVER—COLD FEVER.

The intermittent fever is a specific paroxysmal fever, the febrile phenomena observing a regular succession, characterized by a cold, a hot and a sweating stage, with intervals of comparative good health between the paroxysms.

SYMPTOMS.

A person who has been exposed to malaria will generally, sooner or later, begin to suffer from premonitory symptoms. Many, however, have their constitutions silently undermined without suffering from periodical fever at all. It seems probable in such cases the poison is not presented to the system in a very concentrated form; the blood is so gradually changed that the organs become tolerant of its presence, to such an extent at least that febrile phenomena are not excited at regular intervals for the apparent purpose of expelling it from the blood. On the other hand, people in perfect health may be exposed to the action of malaria in such a noxious form as to be at once completely overwhelmed by it. Cases are not wanting of parties being attacked by intermittent fever in its worst form in less than twenty-four hours after having spent a night in some well known malarial district. After having been exposed to malaria -and here allow me to say that I do not believe a genuine well marked case of intermittent fever was ever produced by any other cause than malaria—the toxic influence is evidenced by some degree of nausea and loss of appetite, with muscular pains in the back and lower limbs, with usually a slight feeling of chilliness, soon passing into trifling heat of the skin, scarcely marked enough to excite attention. This may recur for several days before a regular paroxysm of ague sets in. Or, without such prolonged warnings, after an hour or two merely of the above symptoms, the patient may be seized with the cold stage.

I have said that I did not believe a genuine well marked case of intermittent fever was ever produced by any other cause than malaria. The exciting cause is undoubtedly an exhalation from the soil, given off under conditions already described, to which the name malaria is provisionally applied. In support of that opinion I beg leave to quote from Dr. W. C. Maclean, one of the very cleverest English writers, and a gentleman who seems to have given much attention to the subject; he has studied in India, where the disease presents itself in all its forms and degrees, and where every phase of country is to be found as regards malarial and non-malarial districts. The Dr. says, "That specific agues ever arise from other causes than malaria I do not believe, and am satisfied that where they are attributed to 'cold,' to 'moisture,' to 'irritation,' to the 'influence of the mind,' and such like supposed causes, it will in every such instance be found that the sufferer has at some former period been in a malarial locality, or that this poison, arising it may be from an unexpected source, has been in operation just before the attack." He further adds: "In a most especial manner I desire to express my entire dissent from the doctrine that specific agues are the result of suppressed cutaneous secretions under sudden impressions of cold. If it were so we should have agues constantly occurring in temperate climates during the summer months in places where no miasma exists, which is contrary to all experience. When this poison has been introduced into the system suppressed cutaneous secretions, under sudden impressions of cold, may call

the poison into action, perhaps by concentrating it more in the gastro-duodenal mucous membrane during the state of congestion that follows the impression of cold; but to produce a true specific ague I believe the presence of malaria in the blood to be necessary." [The italics are mine.] He further says: "To the question, why miasmatic poison, unlike that of rheumatism, or variola, or typhus, should produce a periodical and not a continued fever, no satisfactory answer has yet been given; notwithstanding all the ingenious speculations of scientific inquiries, it remains unexplained."

But to return to the *symptoms*. There are three stages which characterize this disease, termed the cold, the hot and the sweating.

After certain premonitory symptoms, of which the most prominent are nausea, languor, lassitude, muscular pains in the back and legs, the cold stage commences. In this the patient becomes chilly, first in the extremities, then in the back, and soon passes into a most unpleasant sensation of coldness over the whole body. The skin shrivels, the nails become blue, and rigors more or less severe rapidly succeed each other. On the very warmest days and in the hottest climate the patient demands more bed clothing, or if the paroxysm is not so severe as to force him to bed, he will place himself as close to the fire as possible and sit over it and shake. I have been pained to see poor little children crouching in a corner near the fire shivering, with their little blue lips and nails, demanding draught after draught of cold water and vomiting it up again even before it was warm in the stomach. The writer of this article has at this moment plainly impressed on his mind the feelings above described, having been a victim a great number of times in early life to intermittent; but for a great many years past he has escaped the disease by using a preventive. Like the rattlesnake's warning the *premonitory* symptoms produce the unpleasant knowledge that danger is nigh, even at hand, and, like the affrighted woodsman, when he hears the fearful sing of that dangerous reptile, we try to escape. Our way of escape, however, does not lie in the same direction, for while he takes himself away from the snake, I destroy the poison by the use of a full dose of *quinine*, and by that means escape altogether the disagreeable disease.

The sensation of cold of which the patient complains is merely a subjective symptom. Incredulous as the shivering patient may be it is certain that the temperature of his blood, even before the chill, is above the natural standard.

The duration of the cold stage is variable; it may last for half an hour to two or three hours, and in rare cases more.

Hot Stage—Flushes of heat at first alternate with slight rigors, by and by a grateful feeling of warmth steals over the whole body, and the bed clothes are thrown off; the increase of temperature is now apparent to the patient and his attendant. The pulse becomes full and frequent. The respiration, though still hurried, becomes more regular. The agreeable sensation that accompanied the first feelings of warmth passes away; nausea, and even vomiting, often distress the patient. Headache and thirst are complained of, and the patient tosses uneasily in a burning fever. The duration of the hot stage varies in accordance to the attack; it may only last an hour or two, or from two to eight or ten hours.

Sweating Stage—Perspiration commences on the brow and extends over the whole body, until the patient sweats freely at every pore. The pulse and temperature rapidly fall to the normal standard, and the *interval* or intermission from which the fever takes its name has commenced. The types of the fever are also named from this interval, or rather the length of it. These are the *quotidian*, which recur daily, and this is the primary disease and the form in which it almost always commences. The *textian* is the name given to that form in which there is a paroxysm every other day, and *quartan* every third day.

The blood is changed from the beginning of the attack, and, probably, from the exposure to the malaria.

Most cases of intermittent will end, if left entirely to nature and a proper diet, in from ten to fourteen days. Its termination if left to nature and a good diet is invariably favorable, if uncomplicated. It, however, by improper food, exercise or exposure, is very subject to relapse, and often leads to other diseases, its complications with which cause death, even under judicious treatment. Hence the great necessity for prompt treatment and proper care.

TREATMENT.

"Happily for us," says the observant traveler, Barton, "the old African treatment is now obsolete. A. B. caught fever—gave him calomel, bled him, blistered him—died on the third day."

Happily, too, for those whose lot is cast in the malarial districts of the United States, and even India, the same may be said; the antiphlogistic treatment of malarial fevers is no more. So completely is this the case that it seems to me like contending with a shadow to say a word in condemnation of it. In Italy ague is still looked upon as an inflammation and treated by general and local bleedings, low diet, &c.

Speaking of this system of treatment in malarial

fevers, a clever writer says, "Formerly when an inflammation manifested itself it was regarded as something superimposed upon the organism—as an enemy attacking the fortress of life, which required to be attacked by the most energetic measures."

"Its supplies must be cut off by the enforcement of rigorous diet, and it must be attacked by the heavy artillery of bleeding, mercury and blisters."

"But it was not kept in mind that by these measures the garrison was weakened in an equal degree with the enemy, or rather in a greater degree, so that even if the adversary were overcome and retired from the contest, the patient often succumbed, owing rather to the severity of the treatment than to the malignancy of the disease."

During the cold stage or chill, if the tongue is foul or the stomach oppressed by food, reaction is hastened and the system placed in better condition to receive the treatment by the use of an emetic; this can be accomplished by the use of twenty grains of ipecac in three or four ounces of water. Under ordinary circumstances it is not at all necessary to give an emetic. My rule, however, is never to give an emetic unless I find the stomach overburdened with food, that is, unless I find the patient has ate heartily just before the chill; then it is better to relieve the stomach; reaction will be had sooner and there will be less nausea during the hot stage and it will be shorter. But, I repeat, an emetic is not necessary unless to relieve the stomach from an overburden of food. The same rule may be regarded as to purgatives; unless the bowels are loaded I would never recommend a purgative, not even a dose of citratized magnesia or Seidlitz powders. If the bowels are loaded a purgative of this class will not only relieve them of the accumulation, but its action will relieve the congested condition

of the solid abdominal viscera and prepare the way for the action of quinine, which is *the* remedy. Dr. Maclean, of London, says in regard to quinine: "In quinine we have a remedy, if skillfully used, particularly in first attacks, which almost deserves the epithet, 'divine,' which has been applied to it."

Then it will be observed that I do not recommend the use of either emetics or cathartics in the treatment of ague, unless they are specially indicated by the stomach or bowels being overloaded.

There is often present one symptom that I failed to mention that sometimes needs attention. I refer to urinary irritation; this is often a troublesome symptom, during the chill especially. This can be relieved at once by giving a dose of bicarbonate of potash with ten drops of laudanum. It may always be assumed that the first attack is of the *quotidian* type, or a paroxysm every day, and measures may be taken accordingly; and if the patient gets twenty-five or thirty grains of quinine between the time of the sweating stage and one or two hours before the same hour arrives next day that marked the time of the first paroxysm, it may be very safely calculated that he will not have a second paroxysm.

The best way to administer quinine for chills is in a fluid state, with a few drops of diluted sulphuric acid (elixir of vitrol) in it; of this enough should be given about the termination of the sweating stage, or before, for the patient to get ten grains; the balance at equal intervals, calculating the time so the patient shall get the last dose at least two or three hours before the time at which the chill began the day previous. If the solution of quinine is given the bitterness is best covered in a little syrup of orange peel, and if this is not at hand, in coffee, cold. If the patient objects to the use of the solution of

quinine it may be given in pills or in powder wrapped in jelly, preserves or fruit; but for an adult try and always use about thirty grains—never less than twenty and for children in proportion. There is a great prejudice in the minds of the people against quinine, and I have heard some say they had been so much injured by its use that they could often feel its effects in their bones. Such persons, of course, know nothing about it or its nature, for any man who does know anything at all of it knows that no such effects can be charged to it, and any medical man who has any regard for his head or heart must say that it is one of our most innocent and harmless remedies, and one that in malarial and all periodical disease is the richest blessing found in medicine to the human race. If you have any prejudice against the article, even if it is founded on or confirmed by experience, lay it aside and take the judgment of all sensible, honest medical men, whose verdict is unanimous in its favor. It is a safe and effective article for the infant a fortnight old, for the strong man of thirty, and for the grey-haired father of three score years and ten. Prejudice against the use of quinine or against quinine only arises from ignorance in regard to the article and its properties.

If the stomach is so irritable that the medicine can not be retained in it, no time should be lost; fifteen grains, in some beef tea or in four ounces of starch water, should be given by injection, after first washing out the rectum by an injection or two of warm water. These injections of fifteen grains of quinine should be repeated often enough for the patient to get at least fifty or sixty grains before the time for the next paroxysm, in which case it is not likely the paroxysm will occur; if, however, it does, the same course should be pursued after it that has been recommended after the first.

If the paroxysm is prevented it is best, and should always be practiced under all circumstances, to give the patient enough quinine for a day or two to keep him under its influence; this may be done by giving him three or four grains three times a day. Much depends upon the effectual treatment by quinine in this complaint: the poison should be effectually destroyed, and it can only be done and the periodicity broken up by the use of quinine. But our duty to our patients is not yet discharged. In a lunar month (four weeks) from the date of his first attack, even should he not in the interval be exposed to malaria afresh, there will be a tendency in his system to repeat the same phenomena as before, and this tendency will be strengthened by every successive attack. A day or two, then, before the time the patient should again be brought under the use of quinine, which should be maintained until that time is past.

Cases are occasionally met with in which quinine seems to have lost its control over the malarial poison, the attacks returning month after month, notwithstanding the *prophylactic* use of the *antidote*. In such cases it will be found that the sufferers have been long in a malarial district, and that there is some enlargement of the liver or spleen. In such cases the fluid extract of toraxicum, with small doses of podophyllin, are most useful; and if to the above be added, for some days, the free use of bicarbonate of potash well diluted, it will be found that quinine, before useless, will soon reassert its power.

Next to quinine, for the treatment of intermittents, stands *arsenic*. This article, different from quinine, is a dangerous one, and one which if used at all should be with great care. It is safe, however, to administer it in the form of Fowler's solution for the cure of ague, in doses

of ten drops three times a day for three or four days. If it is administered a careful lookout should be kept for its earliest signs of constitutional action, which are watering of the mouth, a silvery appearance of the tongue, redness of the eyes; when these appear it must not be continued. I have cured some very old and bad cases of chills with this article; but when quinine can be had there is certainly but little use for any other article. Arsenic is sometimes used because it is so cheap. It enters into many of the patent nostrums that are vended for the cure of ague. They should be touched with great caution.

The diet in this complaint and during convalescence must be good, easy of digestion and nutritious, with the use of good wine or brandy. Burton says: "People will act up to the old nursery saying, 'Starve a fever, feed a cold.' My experience in East Africa long ago untaught me that tenet. I have ever since preferred to support exhausted nature with essence of meat and beef tea, and, when such things are procurable, with champagne, brandy, cum soda, and ye oldest Hock in ye cellar." Dr. Blair is quite as explicit on this point as Burton, as well as Drs. Bennett, Maclean and Morehead.

In the course of an intermittent fever, cerebral, pulmonic, hepatic and gastric complications may occasionally be expected. "After no small experience," says Maclean (Reynold's System of Medicine, page 66, vol. 1), "I unhesitatingly say that the occurrence of drowsiness, mental confusion, suffusion of countenance, and such like symptoms, should not mislead us into the use of routine remedies directed against them. Let all our efforts be used to cure the fever, to stop the paroxysm, and to the due *support* of our patient. When these objects are attained the head symptoms will disappear.

In like manner, the presence of cough, or asthma, or of hepatic congestion, should never influence us to lay aside quinine and the other means recommended above, in order to direct routine treatment to counteract this or that incidental symptom occurring in the course of a malarial fever. Those who do so often put the lives of their patients in great peril."

"Practitioners who omit the use of quinine from a groundless fear of aggravating such symptoms, and substitute strong measures of a so-called antiphlogistic kind, applying leeches and cold to the head, giving nauseating expectorants and purgatives, merely because of the head symptoms already mentioned, the presence of some bronchitic rales and cough, or some tumefaction of the side, will not only have little success in the treatment of malarial fever, but will aggravate the symptoms they seek to cure, hasten alarming exhaustion or bring on sudden collapse."

A nutritious diet, plenty of moderate exercise, pure air and pure water are powerful curative means, and must never be lost sight of in the treatment of disease. This is a fact that has been long overlooked, but is now being given the attention of the great lights in medicine.

REMITTENT FEVER.

SYNONYMS: BILIOUS FEVER—BILIOUS REMITTENT—EPI-DEMIC FEVER—MARSH REMITTENT—GASTRIC MALA-RIOUS—REMITTENT JUNGLE FEVER.

The great number of names that have been given to this fever has always confused the minds of the common people, who have imagined that each name belonged to a different and distinct fever, as in the case of intermittent, typhus, &c. This, however, is not the case. They are all one and the same, and I shall only use the name remittent fever, which may be defined as a strict specific, paroxysmal fever, with exacerbations and remissions, characterized by a slight and ill-defined cold stage, which does not recur at every exacerbation (increase of the fever); an intense hot stage, with violent headache and gastric irritation (irritation of the stomach); and an almost imperceptible sweating stage, which is indeed sometimes wanting.

Remittent is the gravest form of true miasmatic fevers. It has been observed wherever malaria is generated in sufficient concentration, both in hot and in temperate climates, but it is most prevalent and fatal when high temperature and malaria act in combination.

It is found in America, North and South, prevailing chiefly, with varying degrees of severity, in the vast regions between the northern lakes and the Gulf of Mexico. Remittent fever is a more serious disease than any type of intermittent, and is easy to distinguish from that disease by intermittent having a complete apyrexia (freedom from fever) between the paroxysms, while in remittent the defervescence is not complete. The more urgent symptoms between one exacerbation and another abate; in some cases this abatement is well marked, in others it is so slight that the period of so-called remission may escape the notice of all but the careful observer.

Remittent fever, as we have seen, has many synonyms, but there is one the use of which I earnestly deprecate viz.: inflammatory remittent. This is used by some authors and practitioners in the belief that the terrible disturbance of the vascular and nervous systems is due to a genuine phlogasis (external inflammation). This view is not based on the true pathology of the disease, and is calculated to mislead in the treatment of it. I recollect very well when I was about fourteen years old I was attacked with this disease, and the doctor, who stood at the head of the profession in that part of the country, pronounced my disease "inflammatory fever." Taking this view of it he bled me profusely, almost to fainting, each day for three successive days, and gave me mercury in the mean time, without either nourishment, stimulant or tonic, allowing me only a little warm water to quench the thirst that was consuming me. How well now, after a lapse of more than a quarter of century, do I recollect the intensity of that thirst, and how well do I recollect the touching appeals I tried to make to my kind, doting father and mother and the doctor for only one swallow of cold water; but no, the doctor, although a truly tender and good hearted man, would shake his head and say, one swallow of cold water would kill you. After the third day the bleeding was left off. At the commencement of the attack the doctor had placed five blisters upon me, one very large one on my stomach, two smaller ones on the calves of my legs, and two on my arms just below the elbow. This blistering was frequently renewed, and the mercurial treatment, with the use of spirits of nitre, kept up. I had a powerful constitution, one that seems to me must have been of that class that we frequently hear termed "an iron constitution." In about six or seven weeks it overcame the disease and the remedies, which were worse, and I began to improve, but it was many weeks before I could walk. This is only a true history of the mistake of calling remittent fever inflammatory fever, and treating it on the antiphlogistic principle; it is the history of almost every case, and repeats itself every season now in the United States; true, most all of the leading physicians of the present day deprecate such a course, but there are yet many to be found all over this great country of ours who still torment their patients and aggravate the disease by this pernicious antiphlogistic regimen.

SYMPTOMS AND MODES OF COMMENCING.

As in all paludal fevers, so in this, symptoms of gastric irritation are the first evidence of approaching disorder. The patient complains of anxiety, weariness, nausea, languor and lassitude; uneasiness, sometimes amounting to great oppression about the stomach, is, perhaps, the most constant, as it certainly is the most distressing, of the signs of an approaching attack of remittent fever; it is sometimes present for twenty-four or thirty-six hours before the setting in of the cold stage.

The cold stage is neither so long nor so complete as in ague; in fact, sometimes there is only a passing sensation of chilliness, alternating with flushes of heat.

In other cases rigors are present, but they are seldom severe; here, as in ague, those sensations are of cold, and merely subjective, the thermometer, if placed under the arm, indicating a temperature of 2° above the natural standard, which, as the hot stage develops, amounts to about 8°. As the hot stage advances vomiting often begins, and continues throughout the disease a distressing symptom. The sense of fullness about the stomach is not relieved by vomiting, although the amount of fluid thrown off is sometimes large. The tongue is furred, and, as the temperature of the body rises, is dry. The pulse, which in the premonitory stage was slow, small and irregular, now rises rapidly to 100 or 120, and is in one of sthenic habits full; in feeble persons it is frequent, but small and compressible. The countenance is flushed, the eyes suffused, and the patient complains of rending headache, with pain in the limbs and loins; the skin is red and distended; the heat ardent and stinging; the sufferer is restless and tosses in his bed in the vain hope for an easy posture.

When the above symptoms have lasted from six to twelve hours they begin to abate; a very slight degree of moisture breaks out on the brow and neck and gradually spreads over the body; the pulse comes down a little in force and frequency; the heat of the skin diminishes; there is some relief of headache; vomiting ceases, and the patient obtains some sleep. This is the period of remission that makes the character of the disease. This remission generally takes place the next morning after the attack. There is sometimes, also, a remission in the evening or night, but the morning remission is always the most distinct, and is looked for by the experienced physician with much anxiety, for during that brief term he expects to disarm the disease of most

of its terrors, by destroying part at least of the malarial poison; for this disease, like intermittent fever, is caused by *malaria*, and in no other way.

After a respite of some hours, varying from two to six or eight—seldom so long—the fever returns, often without a chill, or one so slight as hardly to be noticed, and all the above symptoms return in an aggravated form. This is technically called the *exacerbation*, which in due time passes into the remission again.

This disease is dangerous just in proportion as it resembles a continued and not a paroxysmal fever.

Death from an uncomplicated remittent fever ought not to occur, and under proper management it will not. Even in ardent cases in sthenic constitutions (if, indeed, there are such constitutions—the word is here used to denote great excitement,) the prognosis is favorable; also even in adynamic cases.

TREATMENT.

The time-honored practice has been to commence the treatment of all fevers with an emetic, and particularly this form. Without any desire on my part to be thought curious or acting merely to be in opposition to others, I claim that this course is unnecessary, for vomiting in a great majority of the cases will require to be checked rather than encouraged. It is often the most trouble-some, as well as the most exhausting, symptom through the whole course of the disease. The disease is not an inflammatory one, therefore bleeding and antiphlogistic remedies have no legitimate sphere of action in the contest.

The treatment, after the room has been well ventilated and the patient made as comfortable as possible, may be commenced by giving him a full dose of calomel and rhubarb; if an adult, say ten grains of each, and recollect to give citrate of magnesia, Seidletz powders or salts in eight or ten hours if it does not act on the bowels. Plenty of iced water or iced lemonade should be allowed the patient at any period of the disease. After the cathartic it will only be necessary to keep the bowels regular by some simple means, taking care not to purge freely any more.

If there is great pain in the head cold applications must be made to it, but care must be taken that such applications do not act, as most often they do from carelessness, as a warm fomentation. Cloths are often folded thick, and wet even in cold water, and placed upon a patient's head, where they are allowed to remain until they really are as a hot fomentation. From this fact alone I have often forborne to recommend their use. The proper way to apply cold to the head is, first to clip the hair close, then pour a small stream of cold water upon it, having it placed over a basin to catch the water. But if ice can be had, let it be beat fine and placed in a bladder or a bag made of oiled silk and applied to the head. If cold can be applied in either of these ways it will be found beneficial.

The heat of the body can be reduced by the use of a tepid sponge bath, to which a little soda or saleratus may be added. The nausea and vomiting may be best treated by allowing the patient a little ice to chew and swallow, or a lump may be placed in the corner of a handkerchief and he be directed to suck it. There may be also a mustard plaster placed over the stomach. I am not, however, much in favor of such applications; where there is great febrile or nervous excitement it is likely to increase them. A fourth of a grain dose of

morphine will generally relieve such cases about as well as anything I know.

Treatment during the remission.—The treatment recommended by Dr. W. C. Maclean, of England, so completely meets my unqualified approbation that I shall incorporate it here in his own language: "On the first signs of this (the remission), as soon, that is, as moisture appears, and the heat of the skin abates, and the pulse comes down in force and frequency, quinine should be given in effective doses of not less than ten grains. I have given fifteen often; twenty sometimes. I am no advocate of excessive doses, and any quantity over twenty grains I deem to be excessive. I am never deterred from giving quinine merely because, even in the intermission, there may be headache or foul tongue. Experience has taught me that the best remedy against those conditions is the one that acts on the toxic (poisonous) agent that is the primary cause of all the disturbance. I am never deterred from giving quinine because the remission is slight. So soon as I am satisfied that there is an abatement of symptoms I proceed to give the remedy, in the full belief that if I make a skillful use of those golden moments of remission, however slight they may be, I shall be rewarded at the end of the second exacerbation with one more distinct and perfect than the first, knowing also that if through timidity I suffer the first remission to pass unimproved, the next may be more faint, unsatisfactory, and difficult to recognize. I by no means wish to imply that there is always so much difficulty in recognizing the remission. I desire only to guard the inexperienced against expecting to find the remission always so distinct as we find it described in books. If quinine is rejected, and the irritability of the stomach is such that a second dose is also vomited, 12

twenty grains ought at once to be administered in any bland fluid by enema. If the stomach retains the medicine it should be repeated every second hour until thirty or thirty-five grains have been taken before the hour of the expected exacerbation. Suppose the purgative has not operated, are we to wait for its operation before giving quinine? I have done so, but finding that I lost more ground by delaying quinine than I gained by the action of the purgative, I abandoned the practice. At the same time I am fully alive to the necessity of securing free action of the bowels at as early a period as possible.

"As soon as the second remission appears quinine must be given as before, and continued until full saturation of the system is evidenced by einchonism or by a distinct abatement of the disease. Ringing in the ears and deafness are unequivocal signs of cinchonism. So soon as this state is brought about, in a vast majority of instances, the exacerbations will become milder and terminate in a copious sweat, and the patient will enter into a state of convalescence."

Having ventured to write with so much confidence on quinine used in this way, I am glad to be able to adduce the testimony of Dr. Davy to the safety of the measure. This high authority says "that in the remittent fever of the West Indies, during the first quarter after the practice was introduced of giving quinine in full doses to cinchonism, out of 165 cases only two proved fatal, and the record of the *post mortem* examination in the two fatal cases shows that they were rather instances of latent phlegmasia than of fever of the true remittent type."

To this unexceptionable testimony I shall only add the evidence of one other observer, of equal reputation and experience. The late Dr. David Blair, SurgeonGeneral of British Guinea, thus expresses himself on the question of the safety of quinine: "It has been prescribed by me to patients of both sexes and all ages, and, when ascertainable, almost invariably to cinchonism, during thirteen years, and probably to the extent of several thousand ounces of the sulphate, and during that time I have seen no danger from its effects, with the exception of three or four cases of imputed abortion."

During the remission the patient should have mild farina, as milk, chicken tea and such like. As soon as the gastric irritability subsides beef tea should be given, and on the first signs of exhaustion nourishments and stimulants should be given at short intervals.

Should quinine ever be given during the exacerbation? "In the adynamic (debility of the vital powers) forms of the disease," says Dr. Maclean, "such as I described as coming from the malarial quarters of the city of Hyderabad, I never waited for a remission, but gave it at once, by mouth or rectum, or both, combining with it the assiduous use of support and stimulants at short intervals. The American physicians led the way in this practice and demonstrated its safety."

Again, when called to cases which have been mismanaged in their early stages, either by the neglect of quinine or the too free use of antiphlogistic means, we must act in the same way. There is no time to wait for a remission; the low form of exacerbation then present will hourly assume more and more a continued type; the remissions, if they appear, will be of short duration, and it will soon be hardly possible to recognize them at all. Such cases can only be saved by energetic means, by quinine, support and stimulants, given in quantities regulated by their effects. In this way most hopeless.

looking cases may be snatched from the jaws of death, as I have seen in a great many instances.

What I wrote on the treatment of the complications of ague I repeat here emphatically. Practitioners who relax in their efforts to stop the exacerbations, who pause in the use of quinine while they apply routine remedies for this or that symptom, now applying leeches to the head because delirium or headache is present, or to the epigastrium because there is some tenderness there, will have little success in the treatment of the worst forms of India remittent.

My experience has satisfied me that such symptoms are most effectually met by the means which directly tend to counteract the poison which is keeping up the excitement and disturbing the functions of the organs to which it is conveyed by the circulation; at the same time active stimulation of the skin over affected organs should not be neglected. It is surprising how much relief may be given by sinapisms, turpentine stupes or stimulating embrocations without having recourse to so double-edged a remedy as depletion.

Mercury has been largely used in the treatment of remittent fever. "When I first went to India," says Maclean, "calomel, chiefly in combination with James' powder, was used to an extent that, to practitioners of the present day, is hardly credible. 'Inflammation' was thought to play an active part in this fever, and as calomel, next to the lancet, was regarded as the most direct antiphlogistic remedy, it was used with the intention of subduing this inflammation. The end sought was to 'affect the mouth,' and quinine, when given at all, was only ventured on when this desired consummation was attained, and then timidly and in utter ignorance of its real value and pure therapeutic action. A practitioner

of this school in India in the present day would be an object of terror to all educated men within reach of his prescriptions.

"Beyond measure miserable is the spectacle of a man whose system, already saturated with malaria, is still further deprayed by mercurial cachexia.

"This was the system which, introduced into India by the late Dr. James Johnson and some of his followers, superseded the admirable treatment recommended by Lind and others of his day. The consequence was not creditable to our art, and the return to more rational treatment, based on a sounder pathology, has been attended with a signal diminution in the mortality from all forms of malarial fevers."

I have given the Doctor's treatment at length, because I do not think a better one or one more in accordance with reason and sound principles could be adopted. He has pushed quinine to a little greater extent than I ever have given it in this disease, but his ten grain doses are small enough. It is the only safe course in these fevers.

TYPHUS FEVER.

IN ENGLISH SPOTTED FEVER—PETECHIAL TYPHUS—EPI-DEMIC OR CONTAGIOUS FEVER—PUTRID OR MALIGNANT FEVER—CAMP FEVER—CONTINUED FEVER, ETC.

Typhus fever is characterized by an eruption of its own, which appears between the third and sixth days. It is an acute, specific disease, lasting from fourteen to twenty-one days; it is eminently contagious, and forms strongly marked epidemics.

CAUSES.

As to the exciting cause of typhus, the great, if not the only, one is the specific poison of the disease transmitted from person to person by contagion, or some thing that contains contagious matter, as clothing, bedding, &c. Evidence of propagation of the fever by communication between the sick is seen in its epidemic spread when it enters a community of susceptible persons, and even more conclusively in the way in which persons exposed to none of its predisposing causes catch the fever when they are in close attendance on typhus patients. Nurses in hospitals where many cases of typhus are received are invariably attacked by it, no matter under what sanitary conditions they are placed. There appears to be no exception to this rule, unless, indeed, it be that the nurse is personally unsusceptible of the disease from

a previous attack of it. I may remark here, that persons who have had typhus are not likely to have it again. There may be some, but there are very few well authenticated cases of second attack on record. Medical men and Catholic priests in attendance upon numerous typhus patients are also almost sure, sooner or later, to get the fever, and that they do not fall ill with as much certainty or rapidity as the nurses appears to be due only to their contact with the sick being less constant and intimate. The contagious matter of the disease seems peculiarly capable of destruction when it is diluted with air. tolerably close communication with the body of a typhus patient appears to be requisite for the reception of contagion from him. Casual visitors to fever wards very seldom get typhus, and in private houses the disease rarely spreads even to the attendants; sometimes, however, it does to the whole household. But visitors so rarely take it that it should not deter any one from faithfully discharging his christian duty, or doing what James defines to be religion.

There are many instances where typhus fever occurs in individuals who can not be ascertained to have been exposed to any contagion, and when the readiest explanation of the occurrence of the fever is, that it has originated *de novo* from the intense operation of its predisposing causes.

SYMPTOMS.

The commencement of typhus is generally marked by loss of appetite, headache and general malaise.

The period of *incubation* is not known, instances being so rare of a person taking typhus from a single exposure. It is probable that it is only a day or two in some cases, and several days in others. For a day or two, and in the absence of information respecting exposure,

there is nothing to distinguish the outset of typhus from that of any other fever, unless it be the absence of positive symptoms of other specific illness. It is particularly difficult to distinguish an attack of typhus from one of acute dyspepsia. Rigors are of frequent occurrence, but they are not so definite or so severe as in small-pox or internal inflammation. The sense of chilliness commonly complained of along with the early headache may not amount to actual shivering, and is often wholly absent. In slight attacks it may not be possible to settle the actual time of invasion. In severe cases, however, the disease begins very suddenly, with shivering, headache, and sometimes vomiting. For three or four days the symptoms get worse, and are accompanied by sleepiness, heat of the skin and thirst, with unusual prostration. The general appearance of the patient will help greatly to recognize the disease: he lies prostrate on his back, with a most dull and weary expression of face. his eyes heavy, and with some dusky flush spots uniformly over his cheeks. In the advanced stage of a severe attack he lies with his eyes shut, or half shut, moaning, and too prostrated to answer questions, to protrude his tongue or move himself in bed; or the mouth is clenched, the tongue and hands tremble, and the muscles are twitching and half rigid. The dryness of the mouth, the sordes (foulness) on the teeth and lips, the hot, dry skin and the deafness are other symptoms which strike an observer so immediately as to deserve to be included in the physiognomy of the disease.

The pulse is accelerated, ranging in mild cases from 80 or 90 to 120, and in severe cases as high as 140. It is generally gradually raised to that height, and seldom falls or varies during the whole course of the disease; to

appearance it seems more or less full, but is easily compressed.

The temperature of the body is raised by the third or fourth day; in severe cases it often reaches 105 to 107°. The maximum temperature is generally attained in the middle of the first week, between the fourth and sixth day, but generally on the fourth day, and then a slight but appreciable fall takes place. There is generally a well marked remission about the seventh day. In typhus, though less than in other forms of fever, there is an exacerbation in the evening, and the remission about the seventh day is, in some cases, only indicated by the comparative slightness of the evening elevation which then takes place. In the more severe cases there is no trace of remission at this period, but the temperature maintains itself steadily, or even rises a little. The absence of this remission marks the case as likely to be a severe one.

In the second week the temperature rises again, but only for a day or two, and scarcely reaches the maximum of the first week.

Between the twelfth and fourteenth days there is a remission in both the mild and severe forms of the disease, even in cases about to prove fatal. In cases of recovery from an average attack defervescence generally occurs sometime between the thirteenth and seventeenth days, and its approach is sometimes announced by slight exacerbation, which renders the subsequent fall more conspicuous. The return of the normal temperature takes place very quickly. In the majority of cases it is complete within twenty-four hours, often in twelve hours. It begins very frequently in the night; and the abrupt manner in which the fever ceases is one of the peculiar

features of the disease, the temperature sometimes falling as much as 3 or 4° in the course of a night.

The eruption, constituting the measly or mulberry rash of typhus, is present, at some time or other during the disease, in about 95 per cent. of cases, and forms the principal diagnostic evidence of the fever.

It has been described by Jenner and most subsequent writers as consisting of two portions, but between the two every intermediate link may be found. The one is a faint, irregular, dusk-red, fine motling, looking as if it lay some little distance below the surface of the skin. The other part of the eruption is formed by separate spots of small size and purplish color scattered over the mottled surface, and looking more or less superficial.

As a rule, the eruption of typhus appears on the fourth or fifth day; it may appear on the third, and is sometimes delayed as late as the seventh. It comes first on the back of the wrists, under the arms, and over the stomach.

The tongue in the earlier stages may be unchanged or covered with a uniform thick, white fur. As the disease advances the tongue becomes dry, the fur forming a rough, brown coating over a red mucous membrane. Often the tongue is so hard and the whole of the mouth so dry that from this cause alone there is difficulty in protruding it. At the end of the second week, in favorable cases, the edges get moist and the tongue cleans, the fur disappearing molecularly or else in patches, leaving the mucous membrane shiny and red. In severe forms of typhus, with a variable amount of fur, the dry tongue cracks and bleeds, giving rise to black sordes during the disease. The tongue may be intensely red and cracked without being much furred, and in such cases the characteristic tongue of typhoid is closely simulated.

Diarrhea is a symptom frequently met with in typhus, but Dr. George Buchanan thinks it may be generally attributed to the treatment. He says it is the practice of some physicians to give a considerable amount of liquid food, and, in his opinion, this causes the diarrhea. But there seems to be some connection between diarrhea and typhus, as patients suffering from the former seem to be more subject to the latter. It is often the case that costiveness is continued through typhus; the bowels, however, move readily with purgatives. nervous symptoms in typhus are prominent, and it is probably through the nervous system that the poison of the disease primarily operates. It is from certain of the nervous symptoms that the name of typhus was originally conferred upon continued fever. From the very outset of the illness these symptoms occur, consisting in rigor, headache, and uneasiness in body and mind. Restlessness and loss of sleep is constant throughout the attack. In a large proportion of cases delirium is a symptom of typhus. It supervenes generally between the fourth and eighth days, the headache going off as the mind begins to wander. In severe typhus the delirium passes into a heavy stupor and tremulousness of the tongue and hands, with twitching of the muscles (subsultus tendenum), is then commonly observed.

The mortality in typhus, taking all classes and all ages, should not exceed ten per cent. This, however, depends much upon the treatment.

TREATMENT.

In a well written article on Typhus by the clever writer, Dr. George Buchanan, he discourses as follows: "Typhus fever, like other diseases of its class, can not be cured nor its duration shortened by any means at present known to medical science. Its symptoms may be combated and its complications may be healed while the patient's strength is supported through the time of the fever, but we know of no way of counteracting the specific disease. Upon a full recognition of this truth the treatment of a case of typhus will be most satisfactorily based. If we propose to ourselves to give the patient the best possible opportunity of recovery our treatment will be more successful than if we direct our efforts to cutting the disease short by any supposed methods of cure."

In a disease which lasts two or three weeks, in which the metamorphosis of tissue is increased and in which ordinary food can not be taken, the patient must be kept up by nourishment appropriate to his new condition, or he will die, as a healthy person deprived of food for the same length of time would die. The essential part of the management of typhus consists in giving this appropriate nourishment, and in preventing the patient dying from the want of it while the curative processes of nature are going on.

Here, as in many other cases, we must depend upon that vis naturae medicatrix, and we must sustain the system, remove what objections we can and palliate the symptoms while that unerring process is going on. If we undertake to "break up the disease," as is often unhappily the case even in our day and time, we only increase the danger of our patient without the shadow of a chance to accomplish our object; we had as well try to break up a case of small-pox, and the attempt would not be followed with such evil consequences as would the attempt in typhus, while we would stand as much chance to accomplish our object.

For the poisoning by malaria we have our antidote—

quinine is a specific in malarial disease. Hence in intermittents or remittents we can cure or break up the disease. Science has not discovered any antidote for measles, smal-pox or typhus, and I think I may add for any other specific contagious disease. There is a long list of those diseases, including some that are not contagious, that have their certain course to run, among which may be included inflammation. In all this class of diseases the great principle must be to aid, support, sustain and assist nature, the grand object being to carry the patient safely through the natural course of the disease. Any departure from this fundamental principle works an injury to the patient and only serves to make men skeptical in medicine. With this great and correct principle ever before you the successful treatment of typhus will be easy. But of the character of this sustenance we will enter more into detail.

In the early stages of the fever, if the patient have appetite, he may be allowed almost any article of diet that his appetite seems to crave, avoiding, of course, such articles as would not be advised for a man not taking exercise, &c. As his dislike for food increases he will still consent to liquids and a few delicacies; but soon there comes a time in every severe case of fever when everything but cold water is distasteful and when food has to be administered like so much medicine to the unwilling patient. At this time the digestive functions are in more or less complete abeyance, and the nutriment given must be such as requires the simplest process for its assimilation. Foremost among nutriments of this kind experience has put beef tea and broths, milk, eggs and alcoholic drinks. Whether alcohol is a nutriment or has any nutritious qualities or not it matters but little, we know that much of the alcohol taken into the stomach is

got rid of by the excretory organs or is retained for some time in the tissues after the manner of many medicines. But with food in its widest sense, as that which keeps up the vital functions, I do not hesitate to class alcohol. Who has not observed the common case of a steady drinker, maintaining for years a standard of bodily health upon a quantity of other nutriment wholly insufficient by itself to maintain such health. I once heard a regular drinker say that he could live well on raw turnips and whisky. To such a case a typhus patient offers some resemblance; he may not be able to take enough food to maintain him, but alcoholic drinks will help him not to starve. Therefore alcohol must have a food value apart from its medicinal action, and in typhus is the place for that value to be exhibited.

All the little tempting delicacies should here be offered, such as Gillen's meat juice, vermicelli in beef tea, chicken or veal broth, mutton broth with rice or bits of toast, egg in custards or beaten up with milk or wine, bread, jellies, blanc mange of isinglass or ground rice, wine whey, weak tea or coffee with milk. The palate should be tempted with those and many other dainties that a good nurse ought to be able to get up. They must be administered in small quantities and often. Two classes of patients must have alcoholic drinks—with either class they are indispensable—first, those who can not take a sufficient quantity of any other kind of nourishment; second, those who have in health been habituated to the use of strong drinks. Other cases in which alcohols must be used are, first, in the case of old persons; second, in all cases of great prostration, in low delirium and coma; third, when the pulse is very compressible or intermittent, and usually when it exceeds 120 beats in a minute; fourth, in cases where the extremities are cold and the surface is livid; fifth, when there is much congestion of the lungs; sixth, when there is any erysipelatous complications.

In some cases of typhus alcohol is unnecessary and even inadmissible, for instance, when there is violent mechanical excitement at an early stage; also, with young people in whom, without notable depression, there is much bronchitis, or in whom true pneumonia can be diagnosed. Alcohol is rarely wanted before the eruption, and is most needful in the second or third week as the patient is approaching the crisis of his disease. ordinary cases requiring alcohol, the strong wines are best adapted, such as Norton's Virginia Seedling, Sherry, Port, &c., while lighter wines with water form excellent drinks. Beer is a very good form of giving alcohol with other nourishing principles, and it is often craved for by the patient. Severe cases, particularly in old persons and in drunkards, require strong spirits, brandy or fine old rye whisky, mixed with beef tea, milk or eggs. moderate allowance to an adult suffering under pretty severe typhus, with dry tongue, moderate delirium, of weak pulse of 120, is a bottle of Norton's Virginia Seedling or good Claret, or half a bottle of fine old Sherry daily.

A bad case, with livid features, tremulous muscles, much low delirium, with coma, weak pulse of 140, may have from twelve to twenty ounces of brandy or whisky daily, distributed in hourly doses. It often happens in such cases that patients for whom there might be a chance to obstinately clench their jaws against any nourishment, or are made sick by it; it is then sometimes possible to tide them over the time of crisis by frequent injections of beef tea and brandy, which are always

well retained, even if there has been some tendency to diarrhea.

For drinks, lemonade, soda water, currant water, cold weak tea, without sugar or milk, or any of them, iced, may be allowed at the patient's choice.

The above is the main line of treatment, but there are many symptoms and complications that can be met by medical agents. The thirst is best relieved by acidulous draughts—twenty drops of diluted hydrochloric acid in an ounce of water-the headache by cold water. The hair should be shaved or cut short, and the head placed in such a manner over a basin that a stream of cold water may be poured on it without saturating the clothes, or an oil silk bag or bladder of ice, beat fine, applied to it. Neither of these applications must be continued too long, for even cold water is a powerful depressing agent if too long applied. By this means the head can be relieved; the cold produces a grateful sensation, and the patient is likely to sleep after the application. If he does not, morphine may be given in quarter grain doses. This may be done in all cases except those in which the pupil of the eye is contracted very much.

The bowels had best be kept open once a day, but slightly confined rather than purged. If there be diarrhea it may be checked by the use of the chalk mixture, as directed in diarrhea. If complicated with pneumonia, bicarbonate of ammonia and senega tea with simple syrup should be used. Vomiting is best checked by ice, lime water or soda water.

During convalescence the patient may be allowed almost any article of diet that would be used in health, with beer, good Scotch ale or wine. I omitted to say that the body of the patient should be sponged daily in tepid water during the whole course of the disease.

Quinine has been recommended highly by some writers in this disease, but as there is no malaria or disposition to periodicity I can not see that it is indicated, and feel safe in depending upon the diet and alcohol for its treatment, and to safely conduct the patient through. In this course I am borne out by the finest physicians in Europe, and also in the United States. The heroic corps will hold up their hands in holy horror at it, but heed them not. Homœopathy beats their treatment, as statistics show, and homœopathy is only another name for nothing.

TYPHOID FEVER.

SYNONYMS: NERVOUS FEVER—ABDOMINAL TYPHUS—CONTENUED FEVER—ENTERIC FEVER—PYTHOGENIC ENTERO MESENTERIC FEVER—GASTRO BILIOUS FEVER—MUCO ENTERITIS.

The above are only a few of the synonyms in use, but enough, in all conscience, to confuse the minds of the common people. The appellation, "typhoid" "abdominal typhus," and the like, lead to an association of two diseases in the mind, which does not exist in reality; such terms, therefore, lead to confusion. "Gastro" has reference to an organ which, at most, only functionally sympathizes with the principal lesion. The term "pythogenic," introduced by Dr. Marchison to imply the putrid sores of the disease, is too general on the one hand, for other acute diseases may arise from this cause; and, on the other hand, enteric fever may arise from other causes than putrid sewer emanations.

In a former article on inflammation (exudation) I have spoken at some length about the inconvenience and positive harm of using names for a thing that do not direct the mind to the thing or condition. I repeat, it is only calculated to create confusion. The rule holds good in everything—Agriculture, Mechanism, Astronomy, Geology, Christianity, Law, or Medicine.

In adopting a term to distinguish one thing from

another we should select one which at once marks it out from all others, and points to a positive feature by which it may be readily distinguished from anything else whatever. This we can always do; if one word will not express it we may use more. The term ENTERO-MESENTERIC is a brief definition of the disease, and the term ought to be used to the exclusion of all others to designate this disease, which is a lesion of the solitary and agninated glands of the intestines.

It may be described as a continued febrile condition of uncertain duration, accompanied by marked intestinal derangement. It commences with nausea or vomiting, its progress is marked by profuse diarrhea of a dirty yellow appearance, associated with abdominal pain, tenderness and lymphoritic swelling; and if the issue is unfavorable it terminates in exhaustion, internal hemorrhage, or perforation of the bowel. Death usually occurs in the fourth week. During the height of the disease a scattered papular rash appears in successive crops on the abdomen and chest. As soon as the disease is fully developed there is well marked hectic fever.

No disease presents, in the mode of the accession of the characteristic symptoms, in the gravity and sequence of these, and in its whole course and ending, so many variations, irregularities, complications and accidents as entero-mesenteric fever.

SYMPTOMS.

The disease may be considered in three classes—first, those in which the symptoms of gastro-intestinal irritation remain latent for days, or even weeks, after the patient has declined in health; second, those in which gastro-intestinal derangement is the chief feature of the disease from its outset to its termination; and third,

those which, in the suddenness of the invasion, the severity of the symptoms, and in the rapid course of the disease, closely resemble cases of narcotico-acid poisoning. Many of the cases of entero-mesenteric fever belong to the *first class*. The disease, indeed, usually commences insidiously and without premonitory indications of intestinal disorder. The decline of his health has been so slowly progressive and uniform that the patient can not state precisely when his illness commenced. For days or weeks he has lost appetite, and felt weak, languid, and disinclined for bodily or mental occupation, complaining of headache, chilly sensation, etc., etc.

The second class is perhaps the most frequent. In these the nature of the disease is manifest in the beginning. The patient may have felt a little indisposed previously, but he is in the midst of his usual occupations or on a journey when he is overtaken with headache, shivering and purging, followed by general pains and more or less fever; there is complete absence of appetite, and nausea and vomiting are frequently amongst the earliest symptoms. There is pain in the abdomen and great thirst. In the third class of cases the symptoms are so sudden and severe that there may be suspicion of poisoning by some acrid narcotic, such as colchicum or poisonous mushrooms. We find the patient in a state of high fever; there is intense heat of the head, acute delirium, frequent vomiting and purging, the tongue dry and red, the abdomen tense and painful. The patient lapses into a state of stupor, the diarrhea persists, and he dies on the fifth or eighth day, or even earlier.

To return to the *first class*—his weakness increases and we find the tongue moist and tolerably clean; the skin cool, pallid and free from rash; the pulse is rather small

and slightly accelerated; the mind is clear and the expression natural; the bowels may be regular or constipated; the abdomen is natural; the other functions of the body are regularly performed. The disease, however, soon becomes manifest by its characteristic symptoms. Nausea and vomiting sometimes of a greenish fluid; the skin hot and dry; the pulse is increased in frequency; the tongue is furred and usually presents red, prominent papillæ at the margins and tip; there is great restlessness and increased headache; the bowels become loose two or three discharges a day; the abdomen full. symptoms of the first and second class here become the same. The tenderness in the abdomen is great, especially in the right side, and pressure upon this part produces a gurgling. A few round, rose-colored papules may now be seen about the abdomen, chest or back. Their number varies much and the quantity of rash bears no proportion to the severity of the disease. Usually we do not find more than three or four papules; occasionally the chest and abdomen is closely spotted with them. During the prevalence of the diarrhea a few flesh spots appear every day, and after 48 hours the old ones begin to fade away. Diarrhea, frequently associated with bilious vomiting, now prevails, and the abdomen becomes distended and tympanitic; the alvine discharges are watery and of light or dirty yellow color and putrid odor. With the supervention of diarrhea all the symptoms become greatly aggravated; the pulse ranges between 120 and 130: the skin is pungently hot and occasionally attains 107 to 108°. During this stage there is great irritability and often considerable delirium, especially at night. Symptoms of active pulmonary congestion: Accelerated breathing, pain in the chest, mucous rales and expectoration streaked with blood are

also liable to rise. The aspect of the patient is indicative of suffering, but the countenance is clear and the eves bright as in scarlatina; the cheeks are suffused with a hectic flush; the urine is clear and copious, and it is frequently retained. The patient may continue in this condition for several days, the body meantime undergoing rapid emaciation. The patient is unable to take food, the fever runs high, there is great restlessness by day and broken sleep and delirium at night. Great pains are complained of in different parts of the trunk; the breathing is quick; there is some cough, and evidence of the presence of active congestion of the lungs. In many cases the tongue becomes dry, contracted and red; the gums are liable to bleed; sordes begin to form on the dry teeth. These symptoms may continue for a few days, the patient passing several watery, yellowish discharges each day from his bowels. Here is a turning point. If the patient has escaped the danger of hemorrhage and perforation of the bowels he may, at the end of this time, begin to progress towards recovery, but if the symptoms take an unfavorable turn he will almost surely die.

If we can subdue the gastric irritation and keep food in the stomach and restrain the diarrhea, the symptoms will usually take a favorable turn.

The cause of entero-mesenteric fever is not well settled. It seems to be pretty well established that water that has been saturated with the drainage of cess-pools and other filthy matter will produce the disease. The question of contagion is an open one; and while some statistics go far to prove that it is contagious, very clever writers seem to think differently; but that it prevails as an epidemic none will deny. That it always takes on, in malarial districts, an intermittent or a remittent type—most always the

latter—none will deny, and, in fact, that malaria has not got much to do with its production, I am not quite certain. As a general thing, no doubt, its production is much owing to the same cause that produces typhus. If the question be asked why that cause will produce typhus in one and entero-mesenteric in another individual, I will answer by asking why malaria will produce dysentery in one individual, intermittent in another and remittent fever in a third? The fact that enteromesenteric takes on an intermittent or a remittent type in a malarial district is not evidence conclusive that malaria has anything to do in its production, for persons long exposed to malaria will always exhibit a tendency in all diseases to periodicity; this is a fact too well known among medical men to need proof. But while it furnishes no evidence that malaria has anything to do in its production, it is a very strong intimation that all such patients should be treated with quinine in connection with the other remedies; and this important fact must never be lost sight of by the practitioner.

TREATMENT.

Men talk and write fluently about "breaking up" typhoid or entero-mesenteric fever, and tell us the process by which it is done, disagreeing, however, widely on the latter—the how.

Even as fine a physician and clever a writer as Dr. John Hughs Bennett, of Scotland, speaks in this way in answer to the question of *Can we cut short a continued fever* (meaning an entero-mesenteric)? He says: "There can be little doubt that it is of immense importance to cut short the disease, if possible." To this I most heartily agree. He proceeds: "Without speaking too positively, I have been induced to believe in this possi-

bility, under certain circumstances, by means of emetics. A fortnight after being appointed physician to the fever hospital of this city, in 1844, I experienced lassitude, headache, and that peculiar cold feeling in the back which generally ushers in fever. I took an emetic of antimony and ipecacuanha, and on the following day was well. Three weeks afterwards I experienced the same symptoms, but thinking it possible that, after all, the emetic had not really been the cause of their removal, I allowed the disorder to proceed, which terminated in a prolonged relapsing fever, with three distinct relapses. I think I have observed the same in other cases; and now, as a rule, whenever called in at the early period of fever, I always order an emetic. This practice, so far as I have observed, never does harm. often good; and although the point is, of course, impossible to demonstrate, it has, I think, been successful in checking at the onset many cases of fever."

The evidence upon which the doctor bases his belief in this "possibility" you can not fail to have seen is barely presumptive. He felt badly and took an emetic and got well. There may not have been the slightest connection between this lassitude and headache and the fever he took three weeks afterwards, and even if there was, is there any evidence or have we any right to believe that an emetic would have cured him of this second attack. There is no weight whatever to be given to this circumstance. But he says it has been his rule ever since to order an emetic, which never does harm, often good, and he thinks it has been successful in checking many cases of fever.

Now, Dr. Dundas contended that he could cut short an attack of typhoid by the administration of quinine in ten grain doses, for five or six times, two hours apart. This statement of Dr. Dundas, of Liverpool, supported by the statements of other medical men in Liverpool, Dr. Bennett was induced to try, which he did honestly and persistently in quite a large number of cases (seven) during the winter of 1851–2, and he says it did not in any way shorten the disease. Dr. Christison tried it in one case and Dr. Robertson in eight, making in all sixteen cases in which it had been tried "with," says Dr. Bennett, "uniform failure in all."

Dr. Bennett admits that Dr. Dundas may have and did give quinine to patients who had the symptoms or an attack of the mild form of fever, febicula, and adds that it is impossible to tell what the character of the fever will be earlier than the seventh day; and, therefore, for Dr. Dundas to make a fair trial with quinine he should not commence it until after the seventh day. Now, suppose we apply the same rule to Dr. Bennett with his emetics, would be "believe in the possibility" of their cutting short the disease then? Certainly not; he is too good a physician for that. No, Dr. Dundas' quinine fails to cut short the disease, Dr. Bennett's "emetics" will fail, and Drs. A. & B.'s mercury, pushed even to salivation, will always fail as much to cut short entero-mesenteric, or typhus fever, or inflammation (exudation), as they will to cut short a case of small-pox or measles. And the sooner every one learns this the better it will be for all hands. As long as men destroy the vital forces by trying to cut short a disease that has a certain course to run, and one that requires all the strength of the system to run it, just that long will from twenty-five to thirtythree per cent. of the patients die that are treated for pneumonia and typhoid fever. But when they are treated with diet alone the mortality is reduced fifty per cent., as statistics show, and by the use of proper medication, aiding, sustaining and assisting nature, and properly combating and relieving the dangerous symptoms as they arise, the mortality will be again largely reduced and much suffering saved those who recover. To do this is now the proper study and the legitimate sphere of the physician. With this principle well before us we can not materially err in the treatment of even so formidable a disease as entero-mesenteric fever.

During the first stage or the stage of excitement, and while the fever symptoms are high, give the following: Dissolve six grains of antimony (tartar emetic) in half an ounce of warm water, add to it two ounces of liquor acetate of ammonia and five and a half ounces of water; give one tablespoonful every four hours. Should it be necessary to move the bowels, castor or sweet oil to a dose of which five drops of laudanum has been added must be given. Cold must be applied to the head, as recommended in typhus, by cutting short the hair and applying the ice bag or the stream, placing the head over a basin.

There is the same necessity for diet in this that there is in typhus, and the same rules of feeding must be observed. The wine need not be commenced as early in this as in typhus; it must be promptly given as soon as the pulse begins to be weak, which sometimes is early in the disease. For this disease I would recommend the Norton's Virginia Seedling in preference to any other. Amongst all the agents at our command there is none which will enable us to conduct a case of fever to a favorable termination more successfully than stimulants, when properly managed.

If the disease presents an intermittent or remittent type, quinine must be given in from five to ten grain doses during the remission every two hours, until a ringing in the ear is produced.

The diarrhea must be checked—at least so there is not more than one or two discharges a day—by the use of the chalk mixture. To four ounces of chalk mixture add one or two drachms of laudanum, and give it in table-spoonful doses.

If the abdomen becomes swelled, a thin linen bandage should be applied around it, and wet cloths may be placed under it; if it becomes much swollen and tender a few drops of turpentine may be dropped upon a cloth wrung out of warm water and applied to it under the bandage, and the patient should take the compound soap pill, to two grains of which one fourth of a grain of nitrate of silver has been added. One of these pills should be taken every four hours. During convalescence great care must be taken as there is always a very great tendency to relapse in this disease, so much so that some authors have termed it "relapsing fever." There is always danger of relapsing until the stools become in every way natural, hence care and a proper diet must be enjoined on the patient for weeks.

YELLOW FEVER—BLACK VOMIT.

This is an infectious, continued fever, ushered in with languor, chilliness, pain in the lumbar region and frontal headache.

From the year 1647, when the first recorded outbreak of yellow fever in the West Indies (according to Ligon's history of Barbadoes) occurred, to the present time this disease has been recurring at irregular intervals in the epidemic form, and gradually extending its range. "It has, moreover," says Dr. John Denis McDonald, "appeared, in many instances, to borrow new vigor by its importation from one place to another." It may be said now to be endemic at the islands of St. Thomas and St. Domingo. Still there is no proof of its spontaneous development anywhere.

The symptoms of yellow fever manifestly result from the more or less potent operation of some subtle organic poison upon the system through the medium of the blood.

Whatever physical condition—such as increase of temperature, moisture and subsequent evaporation, and the like—may be favorable to, or merely coincident with, the development of yellow fever on shore, when once communicated to a ship and isolated by removal from all local influences, its phenomena are very striking and suggestive. Under such circumstances it is difficult to witness the spread of the disease from one individual to

another, and its virulence becoming more intensified by the unavoidable crowding of the sick, without recognizing the important part which the emanations and the excretions of the human body itself must take in the matter.

We are in want of proof of the spontaneous development of yellow fever independently of infected places or persons. The periodical appearance of yellow fever, with intervals of immunity, has its parallel in a fact well known to the students of the diatomacæ and dermidiacæ, namely, that particular species which are known to exist in a definite pond or pool for one season may be at another replaced by forms never before detected in the same spot; while again the original species, under favorable and often unaccountable circumstances, reappear after the lapse of a certain time.

It is not our intention to make even brief reference to all the views that have been put forward as to the nature of the specific cause of yellow fever. The infectious nature of yellow fever is now not only generally admitted, but it forms one of the most distinctive features of the disease, at once marking it off from those fevers which in nearly every other particular simulate it. It is scarcely necessary to multiply or repeat the strong proofs brought before the Epidemiological Society of London, in the papers of Dr. Brison, and the important support of the late lamented Dr. McWilliam. The tenets of the writer, derived from actual facts, are the following, acknowledging a genealogy to the widely spread family of yellow fever:

First, That the first place or the first person, or both, must have become infected somewhere or somehow.

Second, That by veritable, but unknown, or rather

untraced links with this source places having become infected may infect persons.

Third, That persons infected may infect other persons and places previously presumed to be healthy.

Fourth, That the clothing of infected persons or of healthy persons, having communicated with infected places or persons, may impart infection to other places or persons.

Fifth, That if places were moveable, like persons (which is literally true of ships), on being infected, they would impart the virus to other places in sufficiently close proximity.

Sixth, Finally, from the investigation of the history of particular cases, it has been satisfactorily shown that the period of incubation or latency in this disease, i. e., from the imbibition of the poison to the first appearance of symptoms, ranges from one to fourteen or fifteen days.

Like cholera, yellow fever may in the course of a few years range over the whole world; its spread grows wider and wider every few years, and the inhabitants of the New England States may be struck with terror and dismay by witnessing its destructive ravages among them. The temperature of 72° is assumed to be essential to its development, though cases exceptional to this rule have happened. It was once thought that a temperature even higher than this was necessary for cholera to develop and continue, but now we know that it has prevailed with unabating fury in cold countries, even in the dead of winter, when the thermometer ranged as low as 13° Fahr. Taking this view of the case the subject becomes one of interest to every one.

SYMPTOMS.

The disease is generally ushered in by chills, alternating with flashes of heat, sometimes preceded by loss of

appetite, costiveness, flatulence, a sense of debility, and the eyes humid and bright. These premonitory symptoms are not always present. The flashes of heat gradually settle down into regular fever, which is often observed to become more severe towards evening, with something approaching a remission in the morning. The amount of fever, moreover, bears relation to the amount of chill preceding it. Frontal headache is also an early symptom, with shooting pain through the orbits and temples; but distressing as these may be they are usually trivial in comparison with the agony of the lumbar pains which frequently seize the patient at this period and "fell him to the ground," says Dr. McDonald, "in a writhing and convulsive state." In some severe cases, however, this symptom is nearly entirely absent. From the very commencement the patient may be troubled with nausea and epigastric tenderness, or they may be developed as the reactive stage advances.

There is not much uniformity in pulses; they range from 90 to 120 in a minute. The tongue exhibits a creamy, white coat on the dorsum, with red tip and edges, and injected papillæ, with or without soreness of the throat. As the second stage advances, irritability of the stomach is added to the nausea, and the epigastric pain and tenderness become more distressing. patient craves for cold drinks, which are immediately rejected, first with some retching and pain, but subsequently without effort. The matters vomited usually have a suspicious appearance; thus they are sometimes imbued with bile, slightly streaked with blood, or quite serous with small chocolate colored flocculi, discovering a tendency to hæmorrhagia oozing from the lining of the stomach. The urine is scanty and high colored, the stools become gradually more and more deficient of bile,

and the bowels are often obstinately constipated. The patient begins to be vigilant and restless, and disposed to leave his bed, go into another, or walk about naked if he is permitted. He exhibits an evident derangement of intellect, though he may answer questions coherently. Sometimes he has wild hallucinations and other symptoms similar to those of delirium tremens. reaction, or, in other words, fever, may continue for an indefinite period between a few hours and two or three days, and its duration is said to be in the inverse ratio of the violence of the attack. When it subsides it is never more to return, or seldom, at least, being a disease of one single paroxysm. It is followed by a state of remission or metastasis. On this remission, should all the symptoms be alleviated, the pulse becoming less frequent, or even normal, the delirium subsiding, and, above all, if there be no more irritability of the stomach, active perspiration or a critical discharge of bile from the bowels may place him on the high road to recovery. Should the skin have assumed its yellow tint, it will remain all through the convalescence.

If, on the other hand, the ferrety eye whitens, the cheek grows pale, and the lips are blanched white, the pulse is weak and compressible, and the delirium is persistent, with irritable stomach, the apparent remission is delusive and a fatal issue is pending.

TREATMENT.

Whatever is done in yellow fever should be done quickly. We have it on the authority of physicians of large experience, that the disease has been cut short by the timely administration of remedies that have been tried and found wanting at a later period. The first thing at the commencement of an attack of yellow fever

should be a tepid alkaline bath, after which the feet is to be placed in water as warm as it can be endured by the patient. Then he should take a purgative dose, consisting of ten grains of calomel, ten grains of jalap, and three grains of ginger; and in six hours, if the medicine has not operated, an injection of castor oil, molasses and warm water should be given, and repeated at intervals until an action is had, after which opium in full doses should be exhibited, keeping the patient under its influence. I know it is contended by some that opium in any form is not admissible in this disease; so it was contended a few years ago of puerperal convulsions, but we know now that opium is the very best remedy in that complaint.

The poison that produces yellow fever seems to be of an intoxicating character, but while it intoxicates it produces excruciating pain, both in the head, lumbar and epigastric regions. It produces this intoxication on a different principle to that of acohol or opium; the excitement given to the nerves is of a painful character; the soothing, anodyne effects of opium are much needed, and in cases where there is not much vascular excitement even brandy toddy is indicated.

I look upon opium as all important in the treatment of yellow fever; not, however, in the light of a specific like quinine is in malarial fevers, but as an article to palliate the symptoms, and the symptoms in yellow fever are the disease.

While opium is being given other things should not be lost sight of; foot baths should be repeated half a dozen times a day, the body should be sponged often with alkaline water, cold or warm, as agreeable to the patient. The bowels should be kept open by the use of injections, and good beef tea and brandy should be given the patient by injections freely. While all this is being done he should use lime water in such quantities as seem to agree best with his stomach. Five grain doses of chlorate of potash should be given him every hour or two dissolved in an ounce of water.

If the patient has been exposed in a malarial district and his fever exhibits a periodicity in its character, quinine may be used in fifteen grain doses, administered by injection. But this is not a malarial disease, and as a general thing quinine will do no good, if, in fact, it does not prove injurious by producing depression.

As the disease advances the system must be sustained. When beef tea can be retained in the stomach it must be freely given, in connection with good brandy. But, I repeat, they must be given often by injection; without this there can be but little hope of saving the life of the patient. This is a fundamental principle in the treatment of yellow fever; the whole tendency of the patient is to sink, and unless he is carefully sustained the powers of life will succumb.

There is no "specific" found as yet for yellow fever; we have to treat it on general principles, our great object being to obviate the tendency to death and sustain the vital power in its struggle with the foe. Dr. McDonald tells us that the ward-room cook of H. M. S. Jearus "had very nearly succumbed at this crisis, but he rallied immediately on the administration of a *stout* glass of *rum* and water and recovered steadily."

I want to repeat that the fears of using opium in yellow fever are groundless, and that it is an essential in the treatment of that complaint. And if yellow fever was treated with opium alone, in connection with plenty of beef tea and brandy per rectum, and lime water per mouth, the mortality would not be great. But while these things are being done much good is also derived from *pediluvium* and the tepid or cold alkaline bath for the body. The chlorate of potash will also take a high stand as a remedy in connection with the means above named in the treatment of yellow fever.

DYSENTERY.

This disease consists in an inflammation of the mucous lining membrane of the lower or larger intestines, and is divided into two forms, acute and chronic. There is a material difference between dysentery and diarrhea, as will be seen by the description of the two.

Causes.—Dysentery has been ascribed to wet and cold, to contagion, to malaria, polluted water, bad or salt food, to detention in crowded barracks and transport ships, to insufficient clothing and bedding, to retained excretion or to drastic purgations. During the great war through which we have just passed hundreds and thousands of soldiers on both sides fell victims to this scourge. Intermittent or remittent fevers and dysentery often co-exist or succeed each other in the same individal. In this climate dysentery sometimes prevails in an epidemic form during the latter part of summer when the days are hot and the nights cool, particularly if there has been much rain or damp weather.

SYMPTOMS.

Acute dysentery may present itself without any previous constitutional disturbance; but generally at the commencement there is uneasiness and pain in the abdomen of a griping character, with a frequent desire to go to stool, which is followed by temporary relief. The evacuations become thin, mucous and bloody, and

are frequently mixed with small, hard, separate lumps of feces. When the disease becomes developed and ulceration or sloughing commences, the desire to go to stool is more frequent and the ease which succeeds is more transient; the scanty evacuations produce distress rather than relief; the patient is constantly tormented with griping; the stools become feetid, dark-colored and mixed with streaks of blood and lymph, and the bladder sympathizes with the rectum, causing a frequent desire to void the urine. In all cases there is more or less fever and constitutional disturbance: the tongue is furred; the pulse quick and small; the skin harsh, hot and dry; thirst urgent, with no appetite; difficulty of breathing, and great prostration. When the disease becomes chronic it is most intractable; there is usually diminution of the mucous membrane, with degeneration of the glands, while the patient wastes away; the skin becomes dry and scaly; there is improvement one day with a relapse the next; the tongue is florid and glazed; the discharges are most offensive, and the pain, &c., exhausts the patient so that death is looked forward to as a welcome source of relief. Dysentery is often called "bloody flux."

TREATMENT.

The treatment of dysentery may be commenced by the administration of a full dose of citratized magnesia, to which half a grain of sulphate of morphine has been added. Slippery elm bark tea or other good demulcent drinks must be used from the very commencement of the disease, one of the objects being to soothe the inflamed membrane. As soon as the cathartic operates (and if it does not operate in four or five hours it should be repeated without the morphine) give then one grain of opium and about three of ipecac, or as much ipecac as

the patient will bear without nauseating the stomach, and a patient with dysentery or "flux" can bear almost incredible quantities. I have great faith in opium and ipecac in this disease. Opium is objected to by some because it checks the secretions: but in combination with large doses of ipecac this objection is done away with. Opium gives the patient ease and diminishes the peristaltic motion of the bowels, and these are the two grand objects in the treatment of this disease. Give the powder of opium and ipecac about every three, four or six hours, as the case may seem to require. If this treatment produce constipation recourse must be had to castor oil or sweet oil. Great relief may be had by folding a wet cloth three or four double and laying it on the abdomen, or by fomentations or warm poultices on the bowels. When the dysenteric inflammation has reached an advanced stage, when there is disorganization of tissue, then there are still two points to be aimed at, viz.: to support the general strength while the diseased structures are to be kept as quiet as possible. Under these circumstances tonics, astringents and opiates are the tools with which to work. Tincture of Peruvian bark and tincture of colombo, equal parts, may be used in from one to two teaspoonful doses three or four times a day, or quinine will answer a good purpose in one grain doses four or five times a day. When the dejections are abundant, gum kino and laudanum are the remedies, in chalk mixture. Take chalk mixture three ounces, tincture of opii (landanum) half an ounce, gum kino thirty grains; let the kino be rubbed well in a mortar with the chalk mixture, and give one tablespoonful as often as seems necessary to check the violent symptoms. An injection of slippery elm bark tea two ounces and laudanum one teaspoonful is an excellent remedy in this form of disease.

The diet ought to be generous; milk, raw eggs, animal food, ripe Concord or other good varieties of table grapes should be allowed. Stimulants may be, and often are, necessary; nothing will answer a better purpose than the pure Norton's Virginia Seedling wine, not the sugar and water "two measures to one" wine of commerce, but the pure juice of the grape. There are other good varieties of our native wines, but I am not sufficiently acquainted with their medical properties to speak of them or recommend them in disease. No doubt the time is not far distant when they will take the place in the sick room of all the brandies and foreign wines that we have to use now, made up, many of them, of chemicals of a pernicious character. An unfortunate movement has been made in the manufacture of our native wines in this State, mixing with the juice large quantities of water and sugar. It will be years before confidence is reestablished in our native wines—it will be a long time before they recover from the blow. The medical profession would not like to recommend to a patient in a critical condition impure wines, and if the wine growers of Missouri expect to have their wines introduced into the sick chamber or recommended by intelligent physicians, they must frown down every such cheat as that perpetrated by mixing two measures of water to one of the grape juice.

In chronic dysentery, if the patient can it is best to seek some mild, dry, equable climate. Morphine is, perhaps, his best remedy, or at least affords him more relief than any other. Great care must be taken in diet. Sydenham, in his practice of two centuries ago, treated dysentery simply with chicken tea, and did it with vastly greater success than it is treated now by a certain school of practitioners who treat it with mercury, sugar of lead, opium and alum, blood letting, leeches, &c.

DIARRHEA.

Diarrhea is the name given to all cases where there is looseness of the bowels, in which the alvine evacuations are frequent and liquid, without any inflammation of the intestines.

The most common cause of this complaint is, over eating or using improper food, or drinking foul water; it is often the case that a change of water will induce diarrhea. There are many other causes for the complaint, such as exhaustion consequent upon starvation, inhaling the fumes from decayed animal or vegetable matter, or exposure to damp, cold, or very great heat; it is often a symptom of some other disease.

SYMPTOMS.

Purging, nausea, furred tongue, foul breath, flatulence, griping pains and acid eructations, with unhealthy, watery stools, are some of the symptoms that usher in an attack of diarrhea.

This can not be considered a very dangerous complaint except in children or very old people.

TREATMENT.

This must depend very much upon the cause of the complaint. If it arise from fecal matter in the bowels it must be removed, and for this purpose one or two ounces of castor oil with fifteen drops of laudanum

must be given. After proper action is had upon the bowels, the chalk mixture three ounces, laudanum two drachms, gum kino half a drachm, brandy one ounce; rub the kino in a mortar with the brandy until it is dissolved, then add all together and give one tablespoonful every two hours until relief—care being taken to move the bowels if they become costive.

The diet and general habits must be properly attended to. Beef tea is an excellent article with light bread or crackers crumbled into it. The patient must avoid great exercise.

CHOLERA MORBUS.

This is a disease common in warm seasons, and especially in warm climates. The principal features of the disease are, vomiting, purging and severe griping pains in the abdomen.

CAUSES.

Sudden transition from heat to cold, suppressed perspiration, rancid food or that which is indigestible, cold, watery fruit, such as cucumbers, or any indigestible food acting on a stomach previously weakened by heat or fatigue.

SYMPTOMS.

The first symptoms of cholera morbus are, flatulence, sour belchings, with pain of the stomach and intestines. These are quickly succeeded by nausea, violent vomitings, purging of bilious or feculent matter, frequent, small, irregular pulse, great thirst at first, heat, but quickly succeeded by cold, clammy sweats, spasm and coldness of the extremities, flacidity of the skin, hiccup, and sometimes death in a few hours.

In the more malignant forms of the disease it is not uncommon for the discharge to resemble the "rice-water evacuations of Asiatic cholera." Still writers keep up a distinction between the two diseases.

TREATMENT.

A large mustard plaster should be placed over the stomach and allowed to thoroughly redden the skin.

Twenty-five drops of laudanum may be given the patient just after a paroxysm of vomiting and purging. These spells of vomiting generally occur about every fifteen or twenty minutes; and if the laudanum is given just before one of them it will, of course, be ejected; if given immediately after one it will most likely be retained: and often the first dose will stop the vomiting and purging. Morphine, on account of the small bulk, in some cases may be preferable; if it is given, from a third to a half grain may be administered at the first dose and repeated in a dose of one fourth of a grain in two hours; if the first dose has been vomited up another at once must be given. The chalk mixture, as prepared and recommended for diarrhea, may be used in this complaint, but must be repeated often. Brandy mint julep will be found of great advantage in connection with the other treatment recommended. When the patient begins to exhibit signs of weakness, stimulants and beef tea must be promptly given, and if they are not retained in the stomach they must be given by injection. Bad cases may be treated as recommended for cholera. For the relief of the spasm (cramps), which is sometimes a very troublesome symptom, the bromide of potassium may be used in doses of from five to ten grains, in pills or solution. This is also the best treatment for the cramps in cholera.

EPIDEMIC CHOLERA.

SYNONYMS: ASIATIC CHOLERA—ALGIDE CHOLERA—BLUE CHOLERA—CHOLERA MORBUS—ASPHYXIA—CHOLERA SPASMODICA—MALIGNANT CHOLERA—PLAGUE.

Cholera is an epidemic, and in some places an endemic, disease of great mortality. It is characterized in its developed stages by vomiting and purging of watery fluid; by rapidly causing a state of the body called collapse, in which there is extreme depression or diminution of nearly all the functions of life; by terminating in death, often within twenty-four hours from the first symptoms of the disease, or in healthy reaction, or in various dangerous sequels, mostly of a typhus character. It is a severe epidemic affection, well known in India, Africa, Europe and America. In Calcutta and Bombay it prevails so constantly that it may now be said to be endemic there.

The disease is one that has become so wide spread, visiting almost every country on the globe, and is so terrible in its character, carrying dismay and destruction wherever it goes, that a careful examination of it, in all its different aspects, beginning with the first of its known history, symptoms and treatment, seems to be due to the people. In fact, a conviction has seized the minds of the people that the Doctors know but little of the cause, and nature, and treatment of cholera. Such, how-

ever, is not the case; the disease has been well studied and its records well preserved, the most important of which I have before me and will give to the public.

There is but little room for doubt that our forefathers were acquainted with cholera in Europe. In India cholera has been observed several times since the English have had possessions there. There is evidence of its having been known in Madras in 1769, 1770, and 1774. In fact, Sydenham, in his description of cholera morbus in 1669, vol. I, page 219—" heartburn, thirst, quick pulse, heat and anxiety, and frequently a small irregular pulse, great nausea, and sometimes colloquative sweats, contraction of the limbs, fainting, coldness of the extremities, and other like symptoms which greatly terrify the attendants, and often destroy the patient in twenty-four hours." He also says: "There is likewise a dry cholera, with retchings or stools, which I never saw but once, and that was at the beginning of the present autumn (1669), when the former kind was very common." Dr. George Wallas, in his notes in Sydenham's Practice, which was published in 1788, speaking of the treatment of cholera morbus, says "It is also mentioned, according to Sauvages, by Galen, cholera, by Revisius, cholera, and by Hippocrates, dry cholera." Nosologia Methodica, vol. II, page 352. He, Wallas, says: "This mode of cure has been long adopted, and in the genuine cholera established by successful experience. Dr. Charles Ayrton Douglas first orders plentiful dilutation with warm water," &c., showing conclusively that, long before its appearance in Madras, it had been treated on a plan that we may term dilutation, which we may speak more particularly of in the future.

The first authentic history we have of cholera is in the delta of the Ganges, in spots where the huts are on the

mounds, surrounded with pits which are the receptacles of dejections, and of this stagnant water the natives drink. After appearing in Madras in 1769, 1770, and 1774, it attacked Col. Pearse's command while marching to join Sir Eyre Coote, in 1781, and Col. Cockerell's command in 1790. It then appeared in three or four different places in India in 1800. Independent, however, of old records, we have a prominent starting point for the history of cholera in 1817, since which time it has been frequently prevalent. In 1818 the western world was startled with the intelligence of the appearance in India of a disease which was ravaging lower Bengal, and had also attacked the camp of the Marquis of Hastings, then engaged in the Mahratta war, and who was at that time halted on the banks of the Sind, in the upper provinces. A new disease, or at least one unknown in such a terrific form, was carrying destruction through all the ranks of the army, both European and native. scourge appeared in Lord Hastings' camp on the 6th November, 1817, and in five days destroyed 5,000 men. In it, in all, 9,000 deaths occurred.

But not in the camp of war only did it cause surprise and terror. After having shown itself during the previous months in Mymunsing, Patna, Kishnaghur, Chittagong, and some other places, it burst out in August, 1818, in the agricultural province of Jepore, amongst the peasants and laborers of the rice swamps and palm groves. Many thousands were swept away by the pestilence in a few weeks.

There might have been such a disease in the mist of past ages—it may have been the disease so frequently in old times called the "plague," but, as we have to depend upon symptoms to define diseases, we can never determine. But certain it is that the memory of living

man possesses no vivid or substantial knowledge of it. It burst upon the suffering generation with the violence of an unheard of plague, impressing all with dread and consternation.

From this starting point in India cholera spread East and West, far beyond the bounds of Hindostan. Its appearance in other lands may be traced with tolerable accuracy. From Bengal it spread eastward and southward in the following chronological order. We find it in 1818, in Burmah, Arracan and Malacca; in 1819, in Perang, Sumatra, Siam and Ceylon; in 1820, in Tonquin China, and China; 1822-23-24, in all China. Turning to the West we find it in July, 1821, at Muscat and the Persian Gulf; in 1822 in Persia, until 1830; and in 1823, at Astrachan, without spreading further westward until 1829, when it reached Orenburg, through Tartary, revisited Astrachan in 1830, and from thence started on its course through Europe. The westward course continued slowly. In May, 1831, it was severe at Moscow and Warsaw; in July of the same year, at St. Petersburg and Constadt; in October, at Berlin and Vienna. In England the first cases showed themselves at Sunderland, in October, 1831, and the epidemic prevailed in the British Empire for fourteen months. It crossed the Atlantic and reached Quebec in 1832. This fatal malady ravaged the whole of Europe, and left that quarter of the globe in 1837, the last place affected being Rome. Since 1817 epidemics of cholera have been frequent all over India, so that the disease may be said to have been naturalized there, causing a large mortality among all classes. Besides the first great epidemic above mentioned, the western parts of the world have suffered from three severe visitations of cholera, viz.: in 1848-49-50; in 1853-54-55, and in 1864-65-66. Then it

appeared to have traveled from the East much in the manner as that in 1832. Thus cholera seems to have traveled East, South, West and North from Bengal, which became but the centre of an epidemic that has comprised nearly all the world. It traveled slowly at first, and not continuously, but in irregular waves; checked sometimes, but not destroyed by winter cold. Neither climate, nor season, nor earth, nor ocean seem to have arrested its course or to have altered its features. It was equally destructive at St. Petersburg and Moscow as it was in India; as fierce and irresistible amongst the snows of Russia as in the sunburnt region of India; as destructive in the vapory districts of Burmah as in the parched provinces of Hindostan.

CAUSE.

In considering the causation of cholera we must bear in mind that we have to account for a disease spreading quickly over large areas, often preceded by epidemic diarrhea, frequently developing itself with little warning in the places attacked, and often disappearing suddenly and returning to them after brief intervals, remaining absent for many years, visiting with great regularity the same places on each return, sometimes limiting itself with singular abruptness in certain localities, passing over places in its route with strange capriciousness, and afterwards returning to them, spreading sometimes with and sometimes against the prevailing winds.

Cholera is caused by a specific poison; of this there can scarcely be a doubt in any man's mind who has traced it from its first authentic appearance in the delta of the Ganges to its disappearance in St. Louis a year or two ago. But what is the nature of that poison, and how is it conveyed? How is cholera propagated or

diffused is the great question that is agitating the minds of the people. If we once understand how it is propagated or diffused we can to a very great extent avoid it.

There are, no doubt, a great many circumstances that favor its development, and occasionally, doubtless, there are sporadic cases, but certainly its propagation or diffusion is mainly by contagion; still cholera is certainly very little contagious in the sense in which small-pox is commonly called contagious, and if proper precautions are taken where it is present there is scarcely any risk that the disease will spread to persons who nurse and otherwise closely attend upon the sick. Dr. G. Hurt, of St. Louis, Mo., has written a pamphlet on the causes, prevention and cure of cholera, collecting and condensing all the cholera literature that has lately been published coming from the most eminent physicians. Later than the writing of Dr. Hurt's pamphlet Dr. Goodeve, who has been long connected with the large hospital of the Medical College of Calcutta, has written an able article in that splendid book, "Reynolds' System of Medicine." To this article of Dr. Goodeve I am indebted for much of the history and many other important facts in regard to the cause and treatment of cholera. But I shall now quote from Dr. Hurt's paper: "But cholera has a certain peculiar contagiousness of its own now to be explained, which, where sanitary circumstances are bad, can operate with terrible force and at considerable distance from the sick. It appears to be characteristic of cholera-not only of the disease in its developed and alarming form, but equally of the slightest diarrhea which the epidemic influence can produce—that all matters which the patient discharges from his stomach and bowels are infectivethat the patient's power of infecting other persons is represented almost or quite exclusively by those discharges; that they, however, are comparatively noninfective at the moment when they are discharged, but afterwards, while undergoing decomposition, acquire their maximum of infective power; that, if they be cast away without previous disinfection, they impart their own infective quality to the excremental matters with which they mingle in the filth sodden earth or in depositories or conduits of filth, and to the affluvia which those excremental matters evolve; that if the infective material, by leakage or soakage from drains or cesspools, or otherwise, gets access, even in the smallest quantity, directly or through porous soils, to wells or other sources of drinking water it can infect, in the most dangerous manner, very large volumes of water; that the infective influence of choleraic discharges attaches to whatever bedding, clothing, towels and like things have been imbued with them, and renders those things, if not disinfected (as the cholera patient himself would be capable under the same condition), of spreading the disease in places whither they are sent for washing or other purposes; that, in the above described way, even a single case of disease, perhaps of the slightest degree, and perhaps quite unsuspected in the neighborhood, may, if local circumstances co-operate, exert a terribly infective power on considerable masses of the population. 'If local circumstances co-operate,' however, is the stated condition for that possibility; and it will be observed that the essence of the sanitary precautions which have been recommended to nuisance authorities and others is, to annihilate those 'local circumstances.' The choleraic infection does not seem able largely to infect any population unless a filthy state of things be presupposed. It is presupposed that the atmosphere or the drinking water of the population is impure with the most loathsome impurities—that the infective material has had opportunities of action which decent cleanliness would not have afforded it—that, in inefficient drains or cesspools, or other like depositories, it has had time to develop its own infective power and to render other stagnating filth equally infective with itself, and that from such foci of infection the disgusting leaven of disease has spread, in air or water, to be breathed or swallowed by the population. In this view of the case it will be understood that works of sewerage, housedraining and water supply properly executed and properly used give to town populations an almost absolute security that cholera, if introduced among them, can have no means of spreading its infection. And equally it will be understood that, in the absence of those permanent safeguards, no approach to such security can be got without incessant cleansing and disinfections, or without extreme vigilance of every possible contamination of drinking water."

Dr. Goodeve, speaking of the diffusion of cholera by human intercourse, says: "From the mass of evidence on this point it is impossible to doubt that in many instances it has spread in some manner by such means (human intercourse)."

Dr. Barry, in the Indian Annals for 1854, relates that cholera made its appearance in the military hospital at Gowalparah on the 27th of April, and that several cases afterwards occurred. The first case was that of a Sepoy who had just arrived with a detachment from Gowhatty. Now, there was no cholera at Gowhatty when he left, and none at Gowalparah when he arrived, but the whole detachment had, forty hours before, passed through a place called Palassbarree, where it was raging. It is supposed that the sick man brought the disease with him from

thence. It spread, but not fast, and the first cases which occurred at Gowalparah were from those which passed through Palassbarree, their comrades who waited upon them in hospital, and the sick soldiers in the hospital into which they were received.

The dispersion of the children of the Tooting School, on account of the fearful outbreak of cholera among them, in 1848, was attended with attacks and deaths among the children removed, and seizures among the inmates of some of the establishments into which they were received, although there was no cholera at the time in the institutions or surrounding neighborhood.

In the report of the Indian cholera committee on the epidemic of 1861 some remarkable facts are stated with reference to the introduction of cholera into Gurwhal and Kumaon in 1852. The report says: "The districts of Kumaon and British Gurwhal lie entirely within the Himalaya mountains, on the borders of Rohilcund. They cover an area of 12,000 square miles. The population is very scanty, scattered for the most part in small villages, which are often separated from one another by vast mountains and tracts of forest. These districts are cut off from the plains of Northern India by an uninhabited belt of forest, and by the swampy and almost deserted region called the Terai. These tracts, some twenty miles in breadth, effectually cut off the inhabitants of the mountains from those of the plains. The intercourse between them is at all times very little, and confined to a few particular lines leading to places of pilgrimage or trade. Cholera is generally as completely absent from these mountains as from any part of Europe, but it has occasionally spread among their inhabitants epidemically with great violence."

Mr. J. Straehez, C. S., the able president of the cholera

commission, formerly in charge of the hill district of Gurwhal, mentions the following facts, which occurred under his own immediate observation: "In the early part of 1852 extensive works of irrigation were in progress at the foot of the mountain in Kumaon, in the Bhabur (the strip of forest land which divides the mountains from the plains), of which Mr. Colvin has spoken in his note. Several thousand workmen were collected from all parts of the neighboring hills. Cholera broke out among these people with great violence, and they fled panic-stricken to their homes, which were generally at a distance of several days' journey in the interior of the hills. Up to this time cholera had been unheard of in Gurwhal, or in any part of the neighboring mountains. This is a fact which was carefully inquired into and thoroughly ascertained. Many of the work people who had fled from the Bhabur died upon the way to their homes, and many others were attacked when they reached their villages. The cholera broke out among the other inhabitants of the villages, commencing, in very many instances, in the families of the men who had brought the disease from below. For a considerable time cholera was entirely confined to places which had been in direct communication with persons suffering from the disease, but in the course of a few weeks it had become impossible any longer to trace such connection, and cholera became generally epidemic in the hills. Many of the first cases were carefully investigated; it appeared to be proved, beyond the possibility of a doubt, that in many instances cholera had never been heard of in the villages until the arrival of the men from the Bhabur who were the first attacked by it."

Although it is certain that cholera is spread by human intercourse, it may originate in places without it being

possible to trace any previous communication with infected persons. This has happened beyond a doubt. Its appearance in St. Kilda, in the western island of Scotland, is as strong an instance as could be given. This island was cut off from all communication with the main land, and yet the disease appeared in it suddenly without a trace of importation. In 1848 Dr. Parks could not trace any contagious origin for the first cases occurring in London.

CONTAGION OF CHOLERA.

The fact of the diffusion of cholera by human intercourse leads us to inquire how this operates, and directly to the question of the contagion of cholera. Diffusion by contagion does not negative the possibility of an origin independent of infection. It does not seem proved that contagion can exist in the shape of volatile poison emanating from the sick and rapidly infecting the healthy. It would not be so easy to disprove that there may not be some form of poison which may not be volatile, or which may require time to become so, or to develop its poisonous properties and capability of infection. It will be observed from what I have quoted from Dr. Hurt's paper, as written by Mr. John Simon, F. R. S., medical officer of the privy council, that this is most likely the case, i. e., the discharges of every description are not at first infectious, but that after a certain time in the course of their decomposition they become infective to a very high degree. Dr. William Budd advocates the contagiousness of cholera through the medium of the discharges. His propositions are these: first, that the disease is essentially contagious or communicable; and second, that it is disseminated, as he believes, exclusively by the liquid discharges from the intestinal canal of

cholera patients. He also believes that the poison is rapidly multiplied in the human body, and that the rice water discharges contain the product of this multiplicacation and become a source of infection; so that from one cholera patient virus enough may arise to propagate the disease to numerous persons. He considers that the poison may be disseminated in the following principal ways: first, by the soiled hands of the attendants on the sick—a mode of communication which is probably within the limits of the family circle; second, by means of bed and body linen, and other articles tainted with rice-water discharges; and third, through the medium of the soil, which, as the discharges are liquid, necessarily receives the great bulk of them. The doctor thinks that from these places of deposition the poison may spread itself by rising into the air with the products of evaporation, by percolating into drinking water, or by atmospheric dispersion, in the form of impalpable dust, after it has passed into the dried state.

According to this view of Dr. Budd, cholera is contagious, but in a very different form and manner from a volatile or gaseous emanation proceeding from the sick.

Certainly it explains the diffusion of cholera in a more satisfactory manner than the ordinarily received notions of contagious poison.

The conclusion is, that cholera is contagious from the "rice-water discharges," but not from the fresh discharges; if so every bed next to a cholera bed in a hospital would be a bed of disease, every bed and bed-pan would be a source of cholera to every succeeding patient. Observation teaches that such evils do not result. Attendants and sweepers, whose business it is to remove all the discharges, do not suffer out of proportion to others;

but that the discharges, when they undergo decomposition, give off the contagious matter.

Now, the practical lesson to be learned from this is, to use disinfectants; to attend to every discharge, either from the stomach or bowels, and use disinfectants at once with every particle of said discharges. From all the facts and observations before me, of men of science and experience, I feel authorized to say that if this course was rigidly followed, cholera would never spread. That sporadic cases do arise I have no doubt, but if every particle of the discharges from them were properly disinfected, with some of the preparations that I shall hereafter recommend, cholera would never spread.

One other circumstance I will call attention to which seems to me to be almost conclusive in favor of the theory above stated. It is this: establishments containing both male and female inmates, under the same roof, separated from each other merely by walls or partitions, and breathing the same air, eating the same food and drinking the same water, the only difference between them being the use of separate *privies*, the contamination of one of these privies by discharges thrown into it from the first case of cholera, explaining the reason that the disease raged violently aimong one sex, and was confined exclusively to the one sex only. Certainly such cases are strong in favor of the above theory, and such cases are not at all uncommon in choleraic literature.

SYMPTOMS.

Disturbance of the bowels is, doubtless, the first symptom we have to deal with. Drs. Twining, Annessly, Orton, and others, mention other preliminary symptoms: a feeling of malaise, oppression of epigastrium, depression of spirit, pallid, anxious and sorrowful cast of countenance, sense of exhaustion, vertigo, noise in the ears, headache, tremor and sense of debility. doubt," says Dr. Goodeve, "after making due allowances for the fancies and terror of people during cholera epidemics, preliminary disturbances of the nervous system have occurred, and should not be made light of. But it must be acknowledged that in the majority of cases no such forewarnings are perceived. A premonitory symptom, for which medical aid is often called, during cholera epidemics is diarrhea. The disease itself begins suddenly, with purging or vomiting, but in numerous cases there is relaxation of the bowels for some days or hours before the real attack begins; the motions, watery or semi-fluid, sometimes pale, but not always so; three, four or more in twenty-four hours, perhaps with griping. There may be some sense of exhaustion with this. There is a strong tendency to diarrheal complaints during cholera epidemics, and, though some of the cases may be harmless, many of them do ultimately pass into * * It is a matter of common observation cholera. that the attack commences with purging, very often early in the morning; vomiting seldom comes on till later; evacuations are copious and fluid. The first stools generally consist of the ordinary contents of the intestines, mixed with much liquid. The patient often describes them as rushing from him in a stream. Generally the evacuations are frequent and copious; they are soon attended with a feeling of exhaustion. This excessive watery purging characterizes the onset of cholera. It is frequently painless, but not always so; therefore we should not suppose that a patient has not cholera because he has griping pain. So excessive are these evacnations that in two or three hours an ordinary sized stool pan will be filled. With the exception of those

first passed they are of a light straw or pale drab color. The name of rice-water stool has been given to the unmixed cholera evacuation. With purging, but generally beginning later than it, is combined vomiting. The fluid vomited, if unmixed with ingesta, is clear and watery, often in quantities of a pint or more, and generally ejected with force. The vomiting is less constant in its intensity than the purging, and sometimes is very slight, occurs at irregular intervals, and is readily excited by medicine or drink. When the rice-water evacuations appear, cramps generally set in—not often before this; they are most frequent in the fingers and toes, in the calves of the legs, thighs, and sometimes in the abdomen. They may continue through the next stage. By the time the vomiting and purging have been established, and even in the earlier stages, the countenance becomes altered. It assumes a somewhat leaden hue, and has a tendency to shrinking; a stony, staring look, with the capillary circulation sluggish. Alteration of countenance often points out the character of the disease, even before any symptoms have been complained of, though they really may have existed for some hours. Whatever may be the state of the countenance, if there have been many stools or frequent vomiting, symptoms of depression appear, the pulse begins to lose its strength and soundness, and the temperature of the surface falls. Within six or seven hours of the onset of the purging, or even much earlier, the pulse may dwindle down to the faintest thread, or may entirely disappear from the wrist for many hours; in others, even in well marked cases, though in milder forms of the disease, never quite ceasing to be felt at the wrist. This period is one of the greatest interest to the surgeon. With the utmost anxiety he watches, hour after hour, the waning, or the stationary,

or the returning strength of the pulse, its maintenance or its extinction heralding either a happy issue in the first stages, or a future struggle of the deepest danger through the next stage, that of collapse.

"In some cases the balance oscilates for hours. turn adversely, with the failing circulation comes the shrunken face, the lessening of bodily warmth and the greater exhaustion, and the patient passes into the state of collapse. The state of collapse is very much more dangerous than the last. The evacuations from the bowels are now less frequent and less copious. The stomach may act violently, but with less discharge. In the extreme state of the collapse the patient nearly resembles a corpse. The patient becomes restless, tossing off his cover as if in search of cool air, or he half springs up in bed shrieking from agonizing cramps, or he is still more exhausted with irregular paroxysmal gasping for breath, which subsides to be again renewed, and may end in the respiration being more constantly embarrassed. He passes his stools heedlessly, with indifference. Now the features are shrunk and livid, the eye-balls small and busier in their orbits, the lower lid drooping and the eye half open, the surface is deadly cold, except, perhaps, sometimes the forehead, the tongue icy to the touch, the very breath a cold air stream, the general surface pale, blueish or livid, often bathed in cold, profuse sweats, and the pulse absent from the wrist. The patient lies between his paroxysms of cramp in an apathetic state, heedless of all around him, but not comatose, perhaps, until the last. Thirst and sense of heat of the stomach are at times intense and tormenting-water, water, is the urgent and frequent supplication."

There is no more distressing state to witness than that of a patient in a state of collapse from cholera.

The contrast between his state of a few hours previously, the sudden affliction of friends and relations, the apparent hopeless condition of the sufferer, all conspire to impress one painfully. But with all this hope need not be cast aside. The patient may lie for hours without pulse at the wrist, and sometimes even in the brachial artery, and yet recover. Cases without pulse in the brachial artery and manifest permanently impeded pulmonary circulation, with dusky and livid countenance, seldom or never recover, but short of this a large number do.

The stage of collapse may last from twelve to fortyeight hours. The patient may die in three or four or more hours, the pulse never returning, the respiration becoming more and more impeded, and the brain more torpid, with onset of coma and snoring respiration, closing in death; or, after lasting a variable time, from five to twenty or more hours, the patient becomes less restless, less thirsty, and restlessness and anxiety give way to calm; he dozes quietly, with easy respiration. This is of most favorable import. The pulse at the wrist flickers, we are in doubt if we do not feel some movement, then we are certain that we do, then this beat is unmistakably established, the superficial veins show themselves filling at the back of the hands, the surface is less cold, the countenance assumes more and more its natural character, the temperature rises, reaction is certain.

TREATMENT.

The *prophylactic* or preventive treatment of cholera is of the highest importance. Whatever may be our views as to the contagion of cholera, it is well to act upon the principle that it may under certain circumstances be spread in a locality. Certainly there can be but little doubt that the discharges from a cholera subject may

become injurious to the healthy subject; hence they should never be thrown into the common privy, but be treated with chloride of zinc (a disinfectant), and buried in trenches out of harm's way, at some distance from habitations, and where no drainage from them may find entrance into wells or cisterns. The bed pans and other vessels used should also be washed with chloride of zinc and thoroughly cleansed. The covering, the bed clothes, and all linen, should be boiled in lye made from ashes, and well washed. There is not the slightest necessity for burning the linen used. Cholera patients may be safely nursed by their relatives or friends without running any great risk, provided the room is well ventilated, kept clean, and all discharges treated at once with chloride of zinc and removed. Nursing mothers should not resume suckling their children for a few days after an attack of cholera, and then not until the milk has been drawn off well for a time or two.

Good food and pure, clean water should be especially attended to in cholera epidemics. All indigestible food, and all tainted articles, should be especially avoided. Great care should be taken that the water drank be pure and free from all fæcal discharge whatever. If water can not be procured from a clean, well cemented cistern, it would be always well in cholera times to distil it. All food or water likely to produce irritation of the bowels are to be avoided, and every one should be extremely cautious about the administration of cathartics during the prevalence of cholera epidemics; of course, they will be occasionally required, but they should not be given without decided necessity, and then never of the hydragogue character, nor at bed time.

TREATMENT OF CHOLERAIC DIARRHEA.

We will next consider the treatment of that form of diarrhea that is found to prevail in and often to precede cholera, and which we have already observed often runs into cholera. The discharges must be restrained. This can almost always be done by a few doses of chalk mixture, with this addition: to two ounces of chalk mixture, twenty grains of gum kino, an ounce of brandy and two drachms of laudanum; mix and give a tablespoonful every two or three hours until the discharges are checked. If the case seems to be troublesome or intractable, diluted sulphuric acid may be given at the middle of the day and flannel cloths wrung out of warm water, on which a dozen or so drops of spirits of turpentine have been dropped, applied over the stomach and bowels. If there is rice water stools the patient should be treated as directed hereafter for the first stages of cholera. Choleraic diarrhea, like cholera, is much more intractable and dangerous in the commencement of epidemics, following, indeed, the rule of cholera itself. In these periods many cases run into cholera in spite of early and assiduous treatment.

TREATMENT OF CHOLERA.

In this the great object of treatment should be to restrain the passage of exudation from the blood into the intestines.

This contrasts with Dr. George Johnson's theory of elimination by purging, vomiting and diluents; but from his later writings it seems to me that the learned Doctor has almost abandoned his former theory himself. He admits that the disease is usually attended with a profuse drain of fluid from the blood, and he says: "To

increase that drain might be mischievous and might be fatal."—Med. Times and Gazette, June 16, 1866.

"The remedies used," says Dr. Goodeve, "for this (to restrain the passages) generally check the vomiting and purging, so that in the condition of these, taken with the state of the pulse, we have a sort of indication of the degree in which the transudation is interfered with—a sort of indication, because there is not always any close relation between the time of the transudation and the discharges from the bowels. The first medicine given should be a full dose of opium—to an adult two grains. If this dose is retained probably little more medicine will be required. We must not expect the purging to cease immediately after the medicine is swallowed. Perhaps one or two motions will pass away after the dose has been given. If the medicine is vemited up it must be repeated in a few minutes. Half an hour after the opiate has been retained give sugar of lead thirty grains, acetic acid ten drops, and distilled water six ounces; of this give half an ounce or an ounce every half hour or hour, according to the severity of the symptoms. At the end of an hour from the time the first dose of opium has been taken, if the purging persists, give one grain more of opium and continue the drops above named; if the purging still continue smartly but seems inclined to cease and the pulse keeps good, it may be left off or given at wider intervals. It is always necessary that the medicine should be presented to the stomach in the simplest and least irritating form. In the form of pill opium it is more easily retained than laudanum, but when a pill is not at hand forty drops of laudanum in a little cold or iced water or a little brandy. If the above medicine checks the discharges all danger will probably be over in a few hours. Consecutive disease is not likely to follow so simple a case. If there is much vomiting mustard should be applied over the stomach. Cramps are generally relieved by friction with chloroform or with the hand; if severe, by the inhalation of small quantities of chloroform. When the collapse is progressive no opium should be given after the third grain, and indeed if it seems to be fast approaching even the third grain should be withheld.

Collapse.—Dr. Johnson says: "The state of choleraic collapse results from a peculiar arrest of blood through the lungs, occasioned by a morbid poison. It is not a condition of mere exhaustion. It is not relieved by the remedies for exhaustion; and it is made worse by opiates and by spirituous stimulants, which must therefore be avoided." To this Dr. Goodeve adds his testimony, not in so many words, but in principle. Dr. Johnson continues: "The patient should be strictly kept in the recumbent position; he should be allowed to drink pure water freely, and should be abundantly supplied with fresh air. Hot flannels, or bottles, or bags of sand, should be applied to the feet and legs. Five grains of sesquicarbonate of ammonia, or a teaspoonful of spirits of sal-volatile, may be given in an ounce of camphor mixture every two or three hours, as a diffusible stimulant."

If ice is available, it is best to allow ice water, or to place pieces of clear ice in the patient's mouth frequently. The only necessity there is for any restriction on the amount of water given is that too much vomiting may be induced by it. It is dangerous to fill the patient's stomach with brandy while in this condition, as it can only lie there while the stage of collapse lasts. When that is over it may be absorbed and produce fatal effects.

The profuse perspiration must be kept wiped off the surface with a dry, soft towel.

It is useless to try to feed the patient during the stage of collapse, the power of digestion is entirely suspended. Any nourishment administered at this time only adds to the feeling of oppression and distress, from which the act of vomiting only gives relief.

After reaction, and when the normal secretions are restored, the mildest nourishment should be given, in very small quantities but often. It may consist of milk, gruel, rice or beef tea, chicken broth, &c. A little good native wine or brandy toddy may now be used. Care should be taken to treat any symptom that should arise during convalescence.

This system or plan of cholera treatment may to some seem too simple and inefficient for a disease so formidable, and one that has proved so destructive to human life. To such I would say, that a few simple remedies properly applied are calculated to do vastly more good than a host indiscriminately and injudiciously used. In this connection I will make a quotation from an article in the Medical Times and Gazette, April 14th, 1866, written by Dr. Bowerbank. The Dr. says: "I have seen drugs without number tried, and have heard each and every one cried up for a time as a specific and certain cure, but have seen them again fail and put aside. I have seen and tried small and repeated doses of calomel; also large doses of the same; also small and monstrous doses of acetate of lead, the mineral acids, the alkalies, the opiates, quinia, ipecacuanha, belladonna, mineral and vegetable astringents, cajuput oil, croton oil, castor oil, turpentine, creosote, nitrate of silver, sulphate of magnesia, tartar emetic, mustard, table salt in large doses, Stevens' saline powders, charcoal, chlorate of potash, eupatoria or bitter bush, the fresh juice of the aloe, and many others; spirituous stimulants to intoxication, carbonic acid gas, the so-called Liverpool mixture, and other boasted formulæ; warm baths, hot air baths, external friction, enemata of all kinds, saline injections into the veins; but, nevertheless, I fear the results have been very unsatisfactory on the whole. Few of the first cases got well, and if they did, I couldn't satisfy myself that their doing so was the result of what they had taken."

Would you have the victim murdered by the use of pernicious drugs. We have no specific for cholera, but must treat it like many other diseases, on general principles. The principle I have laid down is to check the discharges, and to restrain the passage of exudations from the blood into the intestines. If this is done early, the case always recovers; if it is not accomplished, the patient passes from one stage to another until death relieves him from his sufferings.

GOUT.

(GERMAN—GICHT.)

Gout is an old disease; it was well known to Hippo crates; his account of the disease shows he was well acquainted with many of its silent phenomena. From that time down almost every writer has made reference to the subject. It is a disease of rather common occurrence in some countries where people live high and take insufficient exercise. This does not only produce it in them, but it is entailed, or, in other words, it is hereditary. Some individuals are, undoubtedly, more disposed to gout than others. There is, in short, a proclivity to gout which may be inherited; and it is certainly true as regards this malady that the sins of the father are visited upon the children to the third or fourth generation.

SYMPTOMS.

Dr. Alfred Baring Garrod describes an attack of acute gout in this language: "In many instances the first attack of articular gout comes on without previous warning, or, if there be premonitory symptoms, they are so slight as to pass unnoticed by the patient. This absence of warning, however, is by no means so common as is usually supposed; and I have met with several cases in which the premonitory symptoms have been very distressing, although before the seizure they were

not suspected of being the precursors of any joint affection. Under ordinary circumstances an individual retires to rest in his usual health, but early in the morning, usually from two to five, awakes with an uneasy feeling, probably confined to one of his great toes; on attempting to place his foot on the ground he finds himself unable to support the weight of his body, or, if capable of so doing, the act is accompanied with great pain. If the painful part, generally the ball of the toe, be examined, it is found to be swollen, red, hot and exquisitely tender, and sometimes to such an extent that the mere weight of the bed clothes is intolerable, and even the vibration of the room causes discomfort. The veins proceeding from the toe are tinged with blood and the joint stiff. Although, occasionally, no constitutional disturbance is present, yet most frequently there is evidence of slight fever; the patient has a feeling of chilliness, followed by heat of skin and perspiration, somethirst and loss of appetite, a white tongue and confined bowels, with great restlessness, and is unable to find an easy position. The urine is usually small in quantity, high colored, and deposits, on cooling, a sediment varying in color from pale buff to brick-dust red; occasionally, when febrile disturbance runs high, the fur which encrusts the vessel is of intense pink color; cramps of the legs are often present during an attack and add much to the suffering of the patient.

"If moderate precautions are taken, and the foot kept in a horizontal position, the inflammation usually subsides in the early part of the day; but at evening an exacerbation takes place, and for the greater part of the night the patient is kept awake by the pain, which again subsides as morning advances.

"After a day, or as soon as the swelling decreases, con-

siderable relief is experienced, and in a few more days the tension becomes diminished, as well as the heat and livid redness, and slight sustained pressure will then cause distinct pitting. Subsequently, as the disease disappears, disquamation of the cuticle takes place, and, occasionally, the skin pulls off in flakes of considerable size. Not all cases, even of first attacks, assume this sthenic form; in weakly subjects, and especially in women, the fit may have an asthenic character; the pain and heat may be slight, the redness and swelling by no means well marked, yet, as far as ultimate mischief is concerned, this variety is much worse than the other.

"The duration of the joint inflammation varies considerably in different cases, and is much influenced by the diet and regimen adopted, and likewise by medicine administered. If let alone it will not subside under a week or ten days or more. The fit may be reduced by proper treatment to four or five days. After the complete subsidence of the joint affection the patient often expresses himself as feeling lighter and altogether better than before the occurrence of the attack.

"It is not an uncommon occurrence for both great toes to be attacked, even in a first fit of gout, sometimes simultaneously, but more frequently alternately, the inflammation rapidly subsiding in one toe and as quickly appearing in the other. Sometimes other joints or the ankle are affected with it at the same time as the toes, and occasionally the knees, or, more rarely, some of the joints of the upper extremities.

"In many instances some two or three years elapse before the recurrence of the second attack; but in the majority of cases not more than twelve months, and then either the same joint as in the first seizure or the corresponding joint in the other foot is usually affected.

Similar intervals elapse between the next few paroxysms, and again the same joints are implicated or the inflammation extends along the foot involving the articulations of the arch and of the ankles. As time goes on the disease becomes more general and almost every joint of the extremities suffers, those of the lower usually taking precedence of the upper limbs. In the course of years the intervals between the attacks diminish still more—the yearly visitations become half yearly; afterwards the attacks recur every few months, until at length the patient can scarcely calculate upon being free at all from his malady so numerous and uncertain are its visitations. Gouty inflammations never lead to the formation of pus. An inflamed joint may be intensely red, even scarlet, the skin shining from the distention, and it may altogether exhibit the appearance of suppuration, yet all these symptoms quickly subside, and by resolution merely."

Alcoholic drinks both lay the foundation of gout and excite the attacks of the disease. Distilled spirits certainly have much less tendency to produce gout than either wine or malt liquors. Gout occurs largely in England, even among the the laboring classes who do not live very high, but drink an enormous quantity of "hale" and "'alf-and-'alf," while among the laboring classes of Edinburgh, Glasgow, Poland, Russia and America, up to a few years ago, the drink was almost entirely whisky and in large quantities. In countries where the lighter kinds of wine form the chief beverage of a large class of the people gout is very rare, as for example the working population of France, also of Italy and in most parts of Germany; but it is asserted that in certain parts of Germany, as in Berlin and Munich,

where malt liquor is largely consumed, the disease is much more prevalent.

TREATMENT.

Our attention must first be given to the articular inflammation or the painful joint. For this purpose there is one drug which has an undoubted influence in controlling gouty inflammations, and its action in articular gout appears as marked in gout as that of quinine in ague or tincture of iron in erysipelas; this remedy is colchicum. It signifies not what part of the colchicum plant is taken, whether the corm, the seeds or the flowers, for the same principle pervades the whole plant; neither does it signify what preparations are made use of, whether the wine, the tincture or the extract, provided equivalent doses be administered, for the effects of all are the same.

Dr. Alfred B. Garrod says: "Colchicum has a direct controlling power over the joint disease (speaking of gouty articulation), and I can not call to mind a single instance in which its influence was not well marked, although in many cases a question may arise as to the propriety of its exhibition. Colchicum in full doses produces a marked sedative effect upon the nervous and vascular systems; it has a distinct influence upon the intestinal canal, and, if continued too long and in too large doses, causes tormina and a very troublesome form Although colchicum causes of diarrhea. purging, still its peculiar influence is quite apart from this effect. Occasionally an almost magical change is produced by a single strong dose, without the appearance of the least increase in the secretions from any organ, the effect being manifested in the rapid subsidence of the pain and other symptoms of the joint inflammation; and simple purging, even though copious, will often fail to produce any notable effect under the same circumstances. I am of opinion that in articular gout colchicum may be advantageously administered during the time that the inflammatory symptoms are present, and the dose of the wine of colchicum may be from ten to twenty, or even twenty-five, minims (drops), repeated every six hours. Colchicum in the above manner will of itself be sufficient, in most cases, to cut short the gouty attack, and I have often depended on it alone."

The alkaline plan of treatment is likely to prove advantageous, both for the purpose of increasing the alkaline state of the fluids, and also to keep in solution the salt of uric acid, which is liable to be deposited in the cartilaginous and ligamentous tissues. There can be no doubt of the value of alkaline remedies in the gouty paroxysm; and in many cases such salts, given in a freely diluted form, are sufficient of themselves for its removal, and are particularly applicable when there are circumstances rendering the administration of colchicum unadvisable. Soda is the least applicable of any of the alkalies, unless there be imperfect action of the liver or a deficient secretion of bile, as it has much less power than the other fixed alkalies of dissolving or holding in solution uric acid. The salts of potash are, in the majority of cases, more suitable than the salts of soda, as they not only exert a much greater solvent action upon urate of soda, but likewise augment in a greater degree the excretion of the urine.

If the patient is at all costive his bowels must be opened with the citratized magnesia, and the functions of the skin, which are almost always defective, may be promoted by the use of the spirit vapor bath once a day; at the same time acetate of ammonia may be given. The

patient should use diluent drinks freely, and occasionally saline cathartics—not actively, however, but occasionally.

If the pain is extreme or the patient is very intolerant of it, anodynes must be used. For this purpose the belladonna ointment may be used or smeared over the affected part.

In the treatment of chronic gout colchicum is highly recommended; so also is tincture of guaiacum. But, certainly, reliance may be had better on iodide of potassium, two drachms in syrup of sarsaparilla or water, four ounces to be taken—one teaspoonful three times a day. In connection with this the patient should use freely the tincture of Peruvian bark or quinine. Carbonate of lithia dissolved in acetated water may be given in doses of from five to ten grains once or twice daily; the quantity of water should be large, say four ounces or more. Alkalines, administered for the purpose of holding in solution uric acid and allowing it to be eliminated from the system, should always be administered in a very diluted form.

The diet in the treatment of different forms of gout is of great importance; far more so than in the majority of diseases. When the affection is acute in character and the patient robust he should be confined for a few days to a diet consisting of only bread, sago, tapioca with milk, water toast, rice, &c.; his drink may be freely of cold water. Stimulants are scarcely necessary in this case; still if the patient has been long accustomed to high living a little brandy toddy should be allowed him, but no wine or malt liquors.

When the febrile symptoms have abated a more generous diet must be allowed; at first fish, then game or poultry, and then ordinary meat, but not too freely. Eating and drinking, with poor exercise, has most likely

been the cause of the disorder. Need we expect a cure unless this excess and error is corrected. Then the patient must not drink malt liquor or any of the heavy wines, must eat in moderation, of a good, nutritious and easily digested diet, and take plenty of moderate exercise, and, if he can afford it as well as not, a trip to some of the mineral watering places. Gout generally develops slowly, and it will be found to be slow to get rid of, but it is clearly under the easy control of medicine, and only wants perseverance and patience with rightly directed efforts for its cure.

RHEUMATOID ARTHRITIS.

This is a form of inflammation of the joints, accompanied with little or no fever, and distinguished from gout and rheumatism by its progressive character, by the peculiar morbid changes which it induces, and by the absence of any known morbid state of the blood.

It will perhaps be necessary to give some explanation of the new name, rheumatoid arthritis. On more than one occasion in this work we have called attention to the importance of a name, and have stated why and how an improper name was calculated to mislead the mind and produce confusion. One name is enough for anything, if it is properly selected and describes the thing or condition. This disease has been called rheumatic gout, chronic rheumatic arthritis, chronic rheumatism of the joints, nodosity of the joints, usure des cartilages articularis, rheumatism noueux. The term rheumatoid arthritis was applied to this disease by Dr. A. B. Garrod. Such a mass of names are only calculated to confuse the mind; they show how careless men are in regard to the use of a name. Rheumatic gout is the name commonly given to the disease, both by the profession and the public: but it is difficult to arrive at its true significance, seeing that but few have described it as a separate disease. The term has also been used to signify very different diseases. It is not uncommon to hear gouty patients say they are suffering from rheumatic gout,

simply because the disease, which for many years was manifested in the feet only, now implicates other joints, as the elbows and hands; in fact they regard their malady as gout when it is confined to the feet, but as rheumatic gout when it affects the upper extremities. Sometimes the sub-acute forms of true rheumatism are designated as rheumatic gout, and more especially if the smaller joints are the seat of the attack. There exists, however, a third disease, distinct both from gout and rheumatism, to which we apply the name rheumatoid arthritis.

Chronic rheumatic arthritis is objectionable, because the disease is sometimes acute, and we do not believe it partakes of the nature of true rheumatism. The same objections apply to the name, chronic rheumatism of the joints; usure des cartilages articularis (wasting of the articular cartilages) is an expression very limited in its meaning, it only expresses one of the morbid changes which result from the disease. Nodosity of the joints and rheumatism noueux express the presence of a frequent alteration in appearance caused by the affection (one not always found).

The term rheumatoid arthritis should be employed for the following reasons: The disease is one chiefly affecting the joints, and is of an inflammatory character, hence the name arthritis; it is also one which, at least in its early stages, produces external changes closely resembling those caused by sub-acute forms of rheumatism; but, as it can be shown that the nature of the affection is not the same as that of rheumatism, the prefix "rheumatoid" instead of "rheumatic" is sufficiently expressive. As the word typhoid is allowed for the purpose of designating a form of fever somewhat resembling, but not identical with, typhus, so no objection can be raised to

the use of the prefix rheumatoid when it is intended to signify that the articular inflammation, although not of the same nature as rheumatism, yet resembles it in some of its characters, and more especially in those which are readily appreciated by the senses. It is only since the time of Haygrath that it has been looked upon by any pathologists as an independent disease, and now it is often described under the name of chronic rheumatism, rheumatic gout, &c., and classed as a variety of some other affection.

SYMPTOMS.

It is met with either as an acute or chronic disease, but most frequently as chronic, and in this form I will now notice it.

A person of either sex may have become from some cause or other debilitated, is exposed to cold, and after a few days feels some pain in the knee, there is slight swelling and tenderness, perhaps the temperature is a little elevated; simple rest to the joint may be followed by relief, or even a cure for the time, the swelling abating and the tenderness and pain vanishing. After a few weeks or months, as the case may be, perhaps from a second chill, another joint or even that which was previously implicated becomes affected, and a similar train of symptoms arises, but with this important exception: that in all probability the inflammation does not again subside, but continues fixed to the joint and gradually extends to others. During this time there may be no appreciable constitutional disturbance beyond the general ill health above noted, but in some cases dyspepsia or nervous symptoms are exhibited. The disease, if unchecked, travels over the whole body, affecting almost every joint and sometimes causing much deformity, distortions, enlargement, contractions, &c., rendering the patient a helpless cripple throughout life.

The above example is, indeed, one in which the disease has affected all the mischief it is capable of; fortunately it does not always proceed to this length, but is arrested at some stage or other of its progress, and then only a limited amount of distortion is produced. These deformities have often, if, indeed, they have not always, been attributed to rheumatism, which is never the case; rheumatism does not produce any such results, or at least any distortions or deformities. If the patient has been thought to have rheumatism and has been treated accordingly, the diagnosis and treatment have both been wrong. I feel confident that much of the ill success in the treatment of rheumatism may be attributed to this cause. In rheumatoid arthritis the deformities produced in the hands and arms, when severely affected, are of the following kind: The elbow is flexed, perhaps at an angle of 35° from full extension; the fore arm is in a semipronated position; the joint is also much enlarged and misshaped, more or less rounded from the alteration, hypertrophy of the heads of the bones, as well as of the soft tissues; the wrists are rigid and almost straight, and scarcely admit of motion in any direction; the hands are usually thin from the absorption of fat and wasting of the other tissues; the fingers are usually turned outward and their joints rigid, often completely fixed. One or every finger on a hand may be crooked about out of shape and fixed rigidly so, presenting a very homely appearance. The knees, elbows, hips or some part of the spine may be thus affected, rendering the patient a very "ungainly" cripple. Little hard knobs about as large as a pea may be found situated on the ends of the fingers or in the inside of the hands, where they remain through

life, being usually attended with little or no pain, and, though they cause but slight inconvenience, are decidedly unsightly. Heberden thought they had connection with gout and called the disease "digitorumnodi." This disease was doubtless rheumatoid arthritis; such phenomena often occur in it and in no other disease.

In the acute form now and then cases are met with which, in most of their symptoms, closely resemble acute rheumatism; several joints are attacked, the swelling is considerable, there is distinct increase in the temperature of the affected parts, with pain, tenderness and redness. In these instances constitutional symptoms, as thirst, loss of appetite, heat of the surface, a rigid pulse and other evidences of febrile excitement are often observed. There are, however, wanting some of the charateristics of rheumatic fever, namely, the profuse sweating and the proneness to acute inflammation of the internal and external membranes of the heart, so common in acute rheumatism, and likewise the erratic disposition or tendency of the inflammation to fly from joint to joint. By observing these points of difference no one will fail to readily distinguish between the two.

TREATMENT.

The early treatment of this disease is of the utmost importance when the joints as yet are not seriously or irremediably injured. Of the treatment Dr. Alfred B. Garrod writes, "From what has been stated under the causes and pathology of rheumatoid arthritis, it will be naturally inferred that a prolonged sustaining plan of treatment is imperatively called for, and that all depleting measures must tend most materially to increase the rapidity and severity of the disease. I have witnessed a great number of cases in which depletion has been per-

severed in for a time, and with the effect of producing lamentable results, as the joints become perfectly disorganized; and in many of these it is probable an opposite treatment would have been attended with different results." Colchicum, so fine a remedy for gout, is in this disease worse than useless, producing positive harm, while the alkalies, so serviceable in rheumatism, are of no value in this disease. But one general and positive rule can be laid down as applicable to all cases, and that is, the supporting and sustaining plan must be adopted from the first and continued throughout the course of the disease. If the disease has been caused by hemorrhage of any kind or a seeming poverty of the blood, some of the preparations of iron must be given and continued for a long time.

In certain conditions, where the nutrition is imperfect, from causes often unable to be defined, cod liver oil may be given with great advantage; if the habit is materially improved by it the progress of the joint affection is usually checked. Cod liver oil is particularly indicated in patients of spare habit, and when the disease has been attended with wasting of the body.

If the nervous system has been implicated by depressing causes, such as grief, anxiety, prolonged attendance on sickness or other causes, nervines must also be given—tincture of valerian one teaspoonful, with tincture of Peruvian bark, two teaspoonfuls three or four times a day. If the circulation is very languid, tincture of guaiacum with tincture of the barks must be given; this preparation seems to have a good influence on the skin and gives it a little glow of heat. Fowler's solution may, in ten drop doses, three times a day, be of great service. Iodide of potassium is also a good remedy in this complaint, in connection with quinine or tincture of barks. But, per-

haps, the best remedy, in connection with a proper course of supporting diet is, syrup of iodide of iron, in doses of from twenty to thirty drops, three times a day, and continued for some months. The mineral waters recommended for gout and rheumatism must not be used in rheumatoid arthritis; if they are it will result in much mischief. The stronger saline and alkaline waters must not be used in this disease. The chalebeate waters would be good, but no others. Change of air, occupation and scenery, by aiding the general health, exert a beneficial influence upon the progress of the malady.

As a local application Dr. Garrod recommends blistering or the use of the cantharides liniment. "It produces," he says, "in almost all cases, full vesication, and, with little annoyance, it can be frequently applied so as to produce a series of flying blisters." "Under this treatment," says the doctor, "the effusion will often quickly subside, and the tenderness become much lessened, or even removed, and the liability to serious or permanent injury of the joint is thereby greatly lessened."

Plasters, such as the "arnica plaster," when the affection in any joint has become more chronic, and blisters have affected all they are able to accomplish, may be used with great advantage, as they both render support to the parts and produce a little irritation. Tincture of iodine painted on the affected parts is often of service, as well as spirits and the belladonna liniment. The affected parts should be well sponged, as well as the whole body, with salt water, and then rubbed dry. The joints affected may be moved some, which will be of service to them, but care should be taken not to allow them to be moved enough to cause any increased soreness in them next day.

With regard to alcoholic drinks, which ever kind 17

causes the patient to eat with most relish and digest with most comfort, should be selected, whether ale, wine, gin or brandy.

Solid animal food of the best kind may be used freely, if the stomach will digest it.

A residence in a tolerably warm country during the winter months is desirable, but the air of the place should be dry and bracing. Such a climate will enable the patient to take exercise and have fresh air at times, when otherwise he would be confined to his house.

The clothing should be warm, but much perspiration avoided.

RHEUMATISM.

Rheumatism is a specific inflammation of the structure in and around the joints, attended with great febrile disturbance; erratic; not accompanied with urate of soda, and (?) not leading to suppuration.

Rheumatism may be described as acute and sub-acute. This disease is sometimes called rheumatic fever, arthritis, articular rheumatism, muscular rheumatism, &c. Rheumatoid arthritis and gout have all been described and treated as rheumatism. No wonder the disease has proved, in a majority of cases, a very troublesome and obstinate complaint. Take any half dozen diseases you can select and subject them all to precisely the same treatment, and many difficulties will present themselves. Gout is a disease, rheumatoid arthritis is a disease, rheumatism is a disease, and rheumatoid myositis is a disease, each separate and distinct as intermittent, remittent, typhus, typhoid and yellow fevers; and until they are studied and treated as separate diseases the treatment can never be successful. Now, there are certain prominent features and characteristics peculiar to each of these diseases that will readily distinguish them from each other. No one will fail to see this when he carefully looks over the symptoms and studies each individual case.

SYMPTOMS OF ACUTE RHEUMATISM.

We will try to illustrate the subject by giving a sketch of an acute attack of rheumatism. A person, possibly

somewhat out of health, is exposed to very severe cold, or to cold and damp conjoined; he feels a distinct chill or rigor, which is followed during the second or third day from the exposure by a development of the joint affection; the ankles become painful and unable to bear the weight of the body, and on examination they are found to be tender on pressure, swollen, unduly hot, with a distinct flush upon the surface; at the same time the system exhibits a state of febrile excitement, the pulse is rapid and commonly hard, the whole surface hot and bathed in perspiration, having a peculiar acid, or at least acrid, odor. The tongue is coated with a black, creamy fur; there is loss of appetite, but increased thirst, and constipation of the bowels; the urine is usually scanty and high colored, and gives rise, on cooling, to a copious red deposit. The inflammation is seldom confined to one joint, but gradually extends over the whole body. The larger joints are more frequently affected than the smaller ones in the early period of the attack.

The erratic nature of the affection is usually well exhibited; at one time the knees and ankles, at another the elbows and wrists suffer, and not unfrequently the development of the inflammation in one set of joints is accompanied by its rapid subsidence in another.

A symmetry is often shown in the order of attack; the right ankle, then the left, and so on for the other articulations. It is a matter of astonishment to observe how quickly and completely the inflammation will subside in any part; a knee, for example, will one day be intensely hot and swollen, and so exquisitely tender as not to bear the weight of the bed-clothes, but on the following day will scarcely show any evidence of its previous suffering. This condition of the patient may continue for many days, or even weeks. Its usual duration, when under no

special treatment, is from two to four or five weeks; but perhaps no disease exhibits greater difference in this respect; cases are occasionally met with which spontaneously terminate in five or six days, and others which run a course of six or eight weeks. The pain of the joints and the febrile excitement is greater at night than during the day.

In this form—and this form only—of the disease the covering or lining membrane of the heart, or even the substance of that organ, becomes implicated, and peri and endo-carditis ensue. Sometimes the heart disease follows a somewhat sudden subsidence of the joint inflammation, but more commonly the articular and cardiac affections run a simultaneous course.

In a very large percentage of the cases of acute rheumatism proper the lining membrane of the heart becomes implicated. The pleura and peritoneum may also be implicated in this form of the disease. When the heart is implicated delirium is usually present, especially at night. In some few cases the rheumatic inflammation may attack the membranes of the brain, and all the symptoms of cerebral meningitis are produced. Sometimes the membranes of the spine are involved, and spinal meningitis is set up.

SYMPTOMS OF SUB-ACUTE RHEUMATISM.

From various causes, the nature of the patient's constitution or the presence of cardiac complications, rheumatism assumes a sub-acute form. The joint symptoms remain, but in a much less severe degree, and the febrile disturbance peculiar to the acute form is absent. Such a condition may continue for weeks, months, or even years; at one time relieved, at another aggravated, and the disease may then be compared to a similar form not

unfrequently seen in gout, and to which the term chronic is applied. The disease in this condition is most trouble-some, the articulated surface affected may be in the upper part of the spine, in which case there are cardiac complications, which gradually grow worse from year to year, augmented by each aggravation of the spinal difficulty until it becomes almost continuous.

In sub-acute rheumatism there is often some tenderness of the joints, slight swelling and heat, but the disease differs from both chronic gout and rheumatoid arthritis, inasmuch as it may continue for a long time without leading to any deformity or permanent injury to the articulations. It will be observed that these statements are at variance with those commonly met with in works on this disease, in which the results ascribed to sub-acute rheumatism are so formidable. This difference is easily explained; the results had by rheumatoid arthritis have hitherto been ascribed to sub-acute rheumatism. Persons who have suffered from one attack of rheumatism are very susceptible to a return or to other attacks, all of which will be likely to assume the sub-acute form.

CAUSES.

Among the causes of rheumatism may be enumerated hereditary predisposition; of this there can be but little doubt in the mind of any one who has taken the trouble to examine statistics. Cold may be set down as the most prominent cause, as the tables collected by different authors show most conclusively.

TREATMENT.

Like most all troublesome diseases that can not be cured or cut short, rheumatism has its "thousand and one" remedies—each one a "specific." Every old woman and some of the young ones, and three-fourths of the men,

white, black and copper-colored, can tell you a specific for rheumatism. This is not to be attributed to any desire on their part to play deception, for they have confidence in their remedy; and why? Simply this: a great number of severe cases of rheumatism get rapidly well without the administration of any drugs at all; the drug that happens to be used in cases of this kind is afterwards considered a specific, and as such handed from one to another. Dr. Garrod says: "I am quite certain that many cases even of severe rheumatic fever get rapidly well without the administration of drugs, and on simply colored or camphor water the improvement is often so quick and satisfactory that had not the nature of the treatment been known, great virtue would surely have been ascribed to it; on the other hand, in many instances, the disease runs a lengthened course with many partial relapses; such tardiness is often found under other plans of treatment."

Numerous plans have been proposed for the treatment of rheumatism, such as bleeding, blistering, antimony, mercury, colchicum, nitre and the alkaline treatment. These all have had their advocates and their day of clouded glory; their sun soon, however, setting in a. dark mist that has at last made them almost invisible to men of true science in the present day. Such men consider it feasible to leave the case to nature, merely taking care that the patient is placed under the most favorable circumstances, and simply given expectant treatment. Many practitioners, who would unhesitatingly prescribe either a depleting or powerfully stimulating course of treatment, would shrink with alarm from the very idea of letting nature have her own way. Of the above plans of treatment it is only necessary here to say that but one of them, and that is the saline and

alkaline plan, has any just claims upon our confidence. Before recommending it, it will be necessary to define clearly what we mean by the saline and alkaline treatment.

There are certain saline remedies which, after absorption into the system, are eliminated by the kidneys in the same state as when they enter the stomach. For example: (1), nitrate of potash, chlorate of potash, and other salts in which the base is conjoined with a mineral acid; (2), alkaline salts with carbonic acid, in the form of the neutral or bicarbonate of the base; (3), salts with alkaline bases united with vegetable acid, as citric or tartaric acid. Although these salts are neutral in reaction, when introduced into the stomach they become speedily altered in the blood, the acid is decomposed, and a carbonate of the base appears in the urine; and hence, although they produce no alkaline effect upon the mucous membrane of the alimentary canal, yet upon the blood and the secretions their alkaline effect is well marked. Saline remedies have sometimes been employed in small doses, simply for the purpose of acting upon the secreting organs; at other times they have been given in very large doses, in order to alter the character of the blood itself or powerfully influence the vascular system. For this purpose the nitrate of potash seems to stand at the head of the list. This remedy seems to have been introduced about one hundred years ago, by Dr. Brockelsly; he gave it in gruel, in weak solution, 120 grains to the quart; as much as an ounce of the nitrate should be taken in twenty-four hours. And Dr. Basham says one, two, or even three ounces of the nitrate, freely diluted, may be taken in the twenty-four hours. He also considers the local application of nitre of great value in relieving pain and swelling of the joints. The nitre treatment, upon the whole, seems to have been followed by good results.

Alkaline Treatment.—This, in connection with quinine, seems to me to be the only treatment the present state of the medical science can offer, and cases that will not yield to it can scarcely promise themselves any thing from any other that has ever been proposed.

The over acid state of the body and increased amount of fibrin in the blood would naturally suggest the value of alkaline remedies. Dr. Fuller and Dr. Garrod both have used the alkaline treatment for a long term with excellent results, and with one result that is particularly satisfactory—i. e., in no case where the alkaline treatment had been used by them for forty-eight hours did any heart disease or cardiac symptom appear. seems to be the experience of others. If this be a fact and from all the lights before me I can not doubt it—it is of itself alone a recommendation to which no other course of treatment has any claim. If it protects that great important organ from the ravages of rheumatism it disarms it of its terror, for its only road to death lies in that direction; in consequence of this it is justly entitled to stand higher than any other plan of treatment. The plan consists in administering a dilute solution of bicarbonate of potash in about thirty grain doses, every four hours, until the joint symptoms and febrile symptoms have completely disappeared. These doses produce no inconvenience either to the stomach or bowels; the urine is not notably increased, but its character is completely altered, and the reaction becomes either neutral or alkaline. Upon the heart the alkaline bicarbonate acts as a sedative, reducing the frequency of the pulse sometimes forty-eight beats in the minute, but not causing any faintness. Guaiacum is valuable in the

subacute forms of rheumatism; it should be given in the tincture.

Quino-alkaline treatment is, in my opinion, in all malarial districts the proper treatment for rheumatism, both acute and sub-acute. It consists in combining the two articles together thus: sulphate of quinine is rubbed up with a solution of bicarbonate of potash, to which a little mucilage and some aromatic, as tincture of cardamoms or spirits of chloriform, is subsequently added; each ounce and half dose contains five grains of quinine and thirty grains of the potash salt, the quinine being reduced to the state of carbonate. To the adult the above dose is given each four hours, and persevered in until the joint affection and febrile disturbance have completely abated; it neither increases the thirst nor the furred state of the tongue, and its influence upon the heart is to lower its pulsations, but not to weaken them, and hence when peri and endo-carditis are present its employment is not contra-indicated.

In the sub-acute forms of rheumatism the same plan may be employed, but in a milder form; that is, the doses may be smaller or fewer in number. If desired the citrate of potash or some other alkaline salt with a vegitable acid may be substituted for the bicarbonate; when irritation of the intestinal canal is present the bicarbonate appears to act as a sedative, but when there is a tendency to constipation the citrate or tartrate may be advantageously given, care being taken that absorption of the salt be not too much prevented by its action on the bowels. The potassio tartrate of iron may be added to the quino-alkaline draught after a time with much advantage. This treatment is more efficacious than the simple alkaline plan; there is far less tendency

to relapse, and the patient is left in a more satisfactory condition.

Treatment of heart, lung and brain complications in rheumatism.—Having spoken of several of the more important methods of treating rheumatism, it is desirable we should inquire if any deviations are necessary when it attacks the heart, lungs or other internal organs. It has been already stated that rheumatism leads to but little mischief; if it does not attack the heart the joints rapidly recover from it. There is no such serious damage done them as in rheumatoid arthritis. But when it attacks the heart the case is very different; for there is a great disposition both in the endo-cardial and pericardial serous membranes to throw out lymph, which may lead to the thickening of the valves and adhesion of the surfaces of the pericardium. It is, therefore, a matter of no little moment to ascertain whether any plan can be adopted either to prevent such mischief supervening or of rapidly and efficiently checking it if it has already taken place. There appears to be every probability that the inflammation of the serous membranes of the heart is of the same kind as that of the joints, but it must be remembered that the structures themselves are of a somewhat different character, and remedies which produce but little or no effect upon the joints may cause a decided action upon the cardiac tissues. It must not be forgotten that inflammation lingers much longer in the heart and is modified by the incessant movement of that organ. The simple application of a blister over the cardiac region is productive of much relief to the patient, and is followed by a decided improvement in both the heart's movements and sounds.

Leeches are recommended by high authority for this complication, but I have never used them in it. Mercury

has also been highly recommended in rheumatism of the heart or the cardiac complications. "Mercury," says Garrod, "does not prevent the occurrence of inflammation of the heart, and it only remains to be seen whether this metal has any power of correcting inflammation after it has once ensued; a priori, it appears scarcely probable that a remedy which has no influence in preventing inflammation should have the power of arresting it when it has already commenced." He adds: "For many years I was in the constant habit of administering calomel in cases in which inflammation of the heart was present; but for the last eight or ten years I have not done so as frequently, and have no reason to regret the change of practice."

It is claimed by the advocates of the mercurial plan that when they get the patient under the influence of mercury the violent symptoms always give way. They forget that it is almost impossible during the time of great febrile excitement to get the system under the influence of that metal; and how do we know but when this is effected that it is due to the prior abatement of the inflammation rather than from the influence of the metal.

During the whole course of treatment of cardiac inflammation, evidently the best plan for the joint affection is the one to be pursued, steadily and with perseverance, as anything which favors the abatement of the systemic disease must also relieve the internal complications.

I have already stated that I believed, from all the lights of experience given in the way of statistics, that the alkaline treatment was a preventive to the cardiac complications; and if this be so, certainly it is the proper plan of treatment when they are present, with the addition, however, of the quinine and tincture of iron.

It is always a matter of the highest moment to insist upon the most complete quiet. Constant movement of the organ must necessarily take place, but everything must be shunned which increases this movement. All mental agitation and bodily exertion must be avoided. After the inflammation has subsided the heart is generally left in an irritable state; to allay this a belladonna plaster is necessary, and the administration of small doses of digitalis combined with some salt of iron.

During the high febrile excitement food can only be given in a liquid form, but it is of importance at all times to sustain the system as much as possible; this important fact should be kept in view.

Local treatment, as a general thing, is worse than useless. The rheumatic liniments of the day are a grand humbug, and are only made to deplete the pockets of the ignorant. A learned professor once said that he would "not give one red cent for ten barrels of liniment for the treatment of rheumatism." Hot fomentations may sometimes be used to relieve pain, but even then I would prefer morphine or Dover's powders.

Persons who have once suffered from this disease should be extremely careful to avoid any exposure to cold and damp, and must be careful of their dress that it be warm in winter, as they are very obnoxious to attacks on the slightest cause. Every precaution should be taken to avoid any sudden transition from heat to cold.

RHEUMATOID MYOSITIS.

RHEUMATISM OF THE MUSCLES.

It is an affection of the voluntary muscles, of an inflammatory nature (?), but unaccompanied with swelling, heat, redness or febrile disturbance. This affection is known to the common people by the name of rheumatism, and so treated. The medical profession even call it rheumatism of the muscles, and, as a general rule, give it the same treatment that they are in the habit of giving gout, rheumatoid arthritis and rheumatism. No wonder there is so much disappointment in the treatment of the four different and distinct diseases termed "rheumatism." Just as well had we take the four distinct fevers, intermittent, remittent, typhus and typhoid, and call them all simply "fever" and give them all the same treatment, as to call and treat the four diseases above mentioned simply rheumatism.

Gout, rheumatoid arthritis and rheumatism have already, in former articles, been described. There exists, however, a fourth disease belonging to the same class that I shall call rheumatoid myositis, which will be the subject of this article. I give it this name because it describes the condition. The disease is one affecting the muscles and is of an inflammatory character, hence the name *myositis*. It is also one which at least resembles in some respects rheumatism; but as it can be shown

that the nature of the affection is (like rheumatoid arthritis) not the same as that of rheumatism, the prefix "rheumatoid," instead of "rheumatic," is sufficiently expressive.

As the word typhoid is allowed for the purpose of designating a form of fever somewhat resembling, but not identical with, typhus, so no reasonable objection can be raised to the use of the prefix "rheumatoid," when it is intended to signify that the muscular inflammation, though not the same as rheumatism, yet resembles it in some of its characteristics.

With regard to the history of rheumatoid myositis I can say nothing, for I am not aware of its ever having been looked upon by any pathologist as an independent disease, having always been described under the name of "rheumatism," or "muscular rheumatism," and classed as a variety of gout, or rheumatism, or "chronic rheumatism"—a name manifestly incorrect, as the malady often assumes an acute character. In fact its pathology is different from that of any stage of rheumatism. usually commences as an acute disease, but has a very great tendency to a chronic form; it may affect any of the voluntary muscles, but is apt to attack certain sets rather than others. The seizures are frequently sudden; sometimes, for example, a person goes to bed seemingly well at night and wakes in the morning and finds himself incapable of turning in bed or twisting the neck, and the attempt to do so gives exquisite pain.

If the affection be very acute, he may suffer pain even when quiet, for the muscles are often thrown into a state of spasm; in the less severe form the patient may be comparatively comfortable when at rest, but on the least movement he experiences great pain. On examining the seat of suffering no external phenomena are visible, but

there may be tenderness on exposure; there is also a freedom from febrile excitement, at least at the onset of an attack; but as it progresses thirst, loss of appetite and heat of the skin may ensue, probably due simply to the continuance of the pain and the loss of sleep thereby occasioned; the pulse is but little affected and the urinary secretion preserves its normal state. A very important feature in this disease is the absence of inflammation of the heart, so characteristic of rheumatism; this never happens in rheumatoid myositis or rheumatoid arthritis, making a very broad distinction between either of them and rheumatism. In gout sometimes the heart is affected, but it never is in rheumatoid arthritis or the disease under consideration. In the acute stages the symptoms increase towards evening and are augmented by heat; but when the disease becomes chronic the pain is frequently relieved by its application. The duration of the acute attack of rheumatoid myositis is generally short, usually only a very few days, seldom a week; but when its intensity has become mitigated, it often proves tedious and may be prolonged for an indefinite period of time. It is also apt to be again lighted up if the patient be exposed to any of its exciting causes.

Rheumatoid myositis may have its seat in the large masses of muscles on each side of the spine in the lumbar region; when seated there and acute it renders the patient utterly helpless; the most intense agony is produced on the slightest attempt to rise in bed or even to turn in any direction. When the muscles on one side of the neck are affected (crick in the neck) the patient is compelled to hold his head awry in order to relax the muscles. When some of the intercostal are the seat of the disease the symptoms are, pain in some part of the chest, rendered intense by the act of breathing, but re-

lieved by such pressure as prevents the movement of the ribs. Any of the voluntary muscles are subject to be attacked by the disease—the walls of the abdomen, the muscles of the limbs, the tongue, pharynx, diaphragm, are all sometimes the seat of the disease or are implicated, and even some of the voluntary muscles, as the stomach, intestines and uterus, appear to be susceptible of the disease.

Rheumatoid myositis, although difficult to cure, is not attended with serious results; there is no fear of cardiac inflammation, the great source of danger in rheumatism. Sometimes when it occurs in the lumbar region sciatica or "hip disease" arises from it, which is often both painful and obstinate; but even this complication is not a dangerous one if treated right. But alas for the patient when antiphlogistic regimen is resorted to, which is the popular treatment! the poor sufferer gradually sinks under the severity of the disease and murderous treatment.

TREATMENT.

The internal remedies which have been employed for the cure of the symptoms just described, or for the cure of the disease that gave rise to them, are numerous. As before stated, it has been looked upon as rheumatism, and all the long catalogue of articles that have been recommended for that disease have been tried time and again for this affection of the muscles, of course without advantage, and often, indeed, with great disadvantage.

The treatment may be commenced by the use of large doses of acetate of ammonia, combined with bi-carbonate of potash, at the same time iodide of potassium in five grain doses should be given well diluted in water—say two ounces of water to five grains of the potash—three times a day. In cases which occur in gouty habits, col-

chicum alone, or in combination with other remedies, may be prescribed with much benefit.

The time, however, soon arrives for some medicinal agent, as quinine, which exerts a marked action upon the nervous system; and this may be advantageously combined with the other remedies. A happy combination to be used in connection with the acetate of ammonia and the bi-carbonate of potash is the tincture of cinchona (Peruvian bark) two ounces, ammoniated tincture of guaiacum one ounce, iodide of potassium two drachms; dose, two teaspoonfuls in half a tumbler of water three times a day. Fowler's solution has been given in ten drop doses, three or four times a day, in old obstinate cases with good effect. The bowels must be kept regular, and the patient well protected from cold, damp, or currents of cold air.

Great relief and positive benefit is often had from warm fomentations of bitter herbs, and also from mustard poultices placed over the painful muscle. The liniment of belladonna is also useful in relieving pain. Blisters are recommended, but their utility is doubtful. When the pain has subsided friction and electricity are often resorted to in order to diminish the stiffness and to restore tone and activity to the muscles.

The diet must be generous, with a moderate amount of stimulants, either wine, brandy, good bourbon or rye whisky, or malt liquors. Unlike gout, any of these are admissible, and in fact highly useful in the chronic form. The spirit vapor bath may be occasionally used with caution, if the patient is not much debilitated; if, however, he is, a sponge bath with warm alkaline water must be used, in which case the patient must be speedily wiped dry with considerable friction, getting up a glow of the skin.if possible.

The capillary circulation is always deficient in rheumatoid myositis, while sweating is a characteristic of rheumatism; for this reason guaiacum is an excellent, if indeed not an indispensable, article in the treatment of rhumatoid myositis, while it is positively injurious in rheumatism; still in almost every work we find it recommended for rheumatism. Colchicum, also, is almost a specific for gout, while it may do great damage in rheumatism. Hence you can easily see the necessity for the diseases to be kept separate and distinct, as they belong.

The patient should be warmly clad in flannel, and every precaution taken to avoid chills, or the application of cold or dampness. Care should be taken not to exercise the affected muscles too much; rest will facilitate the cure.

GONORRHEAL RHEUMATISM.

The affection which is known as gonorrheal rheumatism consists of inflammation of and about the joints, following upon urethral discharge.

The disease is one that I have never met with, and I have been skeptical about its existence; but when the disease is mentioned by such authorities as Sir Astley Cooper, Sir Benjamin Brodie, and Bernard Edward Bradhurst, I can but accept it as a fact. From Dr. Bradhurst's article on it I will make a few extracts, for he is excellent authority. In an article of considerable length on this disease he says: "Gonorrhea, then, being established, one or more joints become, in the course of ten days to three weeks, stiff, painful and swollen, the patient having perhaps exposed himself to the weather, sitting or walking in wet clothes, or to a draught of cold air. At the same time the feet may be painful and the conjunctiva inflamed; there will be considerable fever, with dry skin and a furred tongue. Probably, as the articular inflammation increases, the urethral discharge will diminish, again it will become more abundant, and at length cease or degenerate into a gleet. The first attack of gonorrheal rheumatism is invariably preceded by a specific gonorrheal discharge; a subsequent attack may be preceded by urethral discharge which is not of a specific character; and also the same character of articular disease may be re-excited without the urethral discharge being developed. * * * * The joint having become inflamed, a large effusion of serum takes place into the synovial cavity; but although there may be great tension, suppuration never occurs."

After giving a few cases of various grades and interest Dr. Bradhurst gives the following remarkable case: "After several attacks of gonorrheal rheumatism the disease was again set up without urethral discharge appearing. A gentleman, twenty-five years of age, acquired gonorrhea, which was soon followed by pain and swelling of the knees. The urethral discharge appeared on the seventh day, and some few days later synovities supervened with great effusion into the knee joints. The skin was hot and dry, and he suffered acutely, so that he had difficulty in making the least movement. The urethral discharge continued for two months, and then ceased altogether; and the swelling and stiffness of the knee also at length entirely disappeared—having lasted three months. After another interval of three months this individual was again affected with gonorrhea. The urethral discharge again appeared on the seventh day and continued for two months. After some few days the left hip joint became inflamed, as well as the ankle and tarsal joint. The soles of the feet were not affected. This attack was of a much more severe character than the former one—the effusion was greater and the pain more acute. After ten months my patient was able to walk with sticks. Stiffness and a painful condition of the limbs continued yet, however, for many months; but at length he regained the use of his limbs. After a lapse of several months he again contracted the gonorrhea. On this occasion the symptoms resembled closely those already recorded as occurring on former occasions; but he never entirely recov-

ered from the stiffness which resulted from this attack of articular inflammation. Now both hips, both ankles and one knee became inflamed; he also suffered from ophthalmia. Ankylosis did not occur, but there were certain of the joints which prevented him from rising after he had been seated for some hours. About six months after he was able to walk about he married. Painful attempts were made to consummate the marriage, but it was found to be impossible. time—namely, within a very short period of marriage articular inflammation recurred. On this occasion, however, there was no urethral discharge whatever. The articular inflammation proceeded, and, at length, produced ankylosis of every joint in succession; so that in five years the whole skeleton was implicated; the atlas was ankylosed with the axis, and, in consequence, the head could not be moved; and all the vertebræ were ankylosed together, and the hips, knees, ankles, shoulders, elbows, wrists and jaw were so firmly fixed that no movement whatever could be obtained."

TREATMENT.

For the treatment of this disease the doctor recommends purgatives freely and a little blood from the arm, with Dover's powders freely at night. He also recommends the Turkish bath. In the chronic stage he recommends thirty or forty grains of iodide of potassium daily and light diet; also, gutta percha splints to the affected joint to prevent motion. In addition, I would recommend tonics plentifully given, or bark and a more generous diet, and later alcoholic stimulants.

VACCINATION.

Vaccination or *vaccine inoculation* is the process by which a peculiar specific disease—vaccinia or the cowpox—is introduced into the human system with a view of protecting it against an attack of small-pox.

About the year 1768 Edward Jenner, an apprentice to a surgeon at Saulsbury, near Bristol, was impressed with the belief that milkers who had been infected with a disease known as cow-pox were not susceptible to small-pox. At a very early period of his medical career, which was a very brilliant one, he set himself to investigate the truth of the matter, and in the course of inquiries and reflections which satisfied him on this point, his genius conceived the idea that it might be possible to propagate the cow-pox at will in man, first by directly inoculating it from the cow and then from one human subject to another, and that thereby protection against small-pox might be imparted in perpetuity.

It is in this transmission of vaccinia from one human subject to another that the practical usefulness of Dr. Jenner's discovery lies; and since he first properly made the process known all ordinary vaccinations have been carried on in this way. Lymph has since that time occasionally been obtained direct from the cow; but the great bulk of the vaccinations of the present day, in Europe and America at least, are performed with lymph transmitted from the early direct vaccinations of Jenner himself.

This discovery of Dr. Jenner, put into practice about the year 1798, justly stands acknowledged one of the greatest in the science of medicine, and has done more, perhaps, to prevent suffering and premature death than any other discovery ever made. It protects almost universally against small-pox, and the few cases that are susceptible to it are almost universally so light that but little importance can be attached to them; in fact it almost completely disarms a disease at once the most terrible, the most loathsome and the most dangerous of all its terrors.

Persons who have once been successfully vaccinated are, as a rule, permanently protected against small-pox. A certain but indeterminable proportion of vaccinated persons will, however, be liable at some time or other of their lives, especially under epidemic influence, to take small-pox in a mild and modified form. A very much smaller proportion will be liable to take it in a severe, disfiguring, and even fatal form. But the liability of any individual to take small-pox severely after vaccination, and probably the liability to take it at all, will be inversely as the goodness and amount of the vaccination. Children should all be vaccinated, but except for pressing reasons they should only be vaccinated when they are in good health. Especially they must be free from any acute disease, from diarrhea or from any skin disease, such as herpes, &c. There are circumstances of risk, however, as when the infection of small-pox is near at hand, which render it imperative to perform vaccination, notwithstanding this contra-indication. As a rule it is always best to vaccinate children when they are from three to six months old; at three it is preferable, as at that early period they are free from the disturbing element of teething. Under circumstances, however, of direct exposure to small-pox it should be well understood that no age is too early for vaccination; infants have been repeatedly vaccinated immediately after birth and thereby saved. In all cases of much risk it is of the utmost importance to avoid delay. The loss of a single day may be the loss of a precious life. Vaccination may be in time to prevent small-pox altogether; but even supposing the variolous poison to have been imbibed before the vaccination has been performed, still if the vaccination be only got to the stage of areola before the small-pox manifests itself, it will exert its modifying power and the child will be saved. The time required for small-pox to develop or the time for incubation is twelve days, and the time required for vaccination to be carried to areola being only nine days, it is manifest that even a person who has imbibed the infection of small-pox may, by being vaccinated within the first three days after the reception of the infection, obtain the modifying effects of vaccination. A day more and the vaccination will be too late to do any good.

The lymph to be used in vaccinating must be taken from healthy subjects and from thoroughly characteristic vesicles. Much has been written on this subject, and I believe up to about 1861 the profession had, as a general thing, come to the conclusion that it was not really of great importance whether the subject from whom the lymph was taken was really very healthy or not; even the profession had almost come to the erroneous conclusion that there was no danger in using the lymph out of the arm of a person diseased with syphilis (pox). This security, however, was broken by a very circumstantial account of a singular outbreak of epidemic syphilis at Rivalta, in 1861, traceable it was said to a vaccinal origin, and by one or two cases—especially by one which

occurred in the wards of M. Trousseau, at the Hotel Dieu, in Paris, in 1861—which afforded, it was alleged, direct proof of vaccino-syphilitic inoculation.

It is a little strange that from vaccination with syphilitic matter and vaccine lymph, both at the same time and in the same place, syphilis and not vaccina would result, but we know that this would be the case from a great number of experiments. Then the question very naturally arises. How then can a person by being vaccinated from the arm of a syphilitic individual have both vaccina and syphilis developed? We do not have very far to seek for a solution of this problem. In syphilitic disease the blood is poisoned by the absorption of syphilitic virus. The communication takes place through the blood; the lymph and syphilitic blood being inoculated together, each within its own period of incubation will produce its own specific results. The vaccina disease will first run its course, or nearly so. The effects of the blood inoculation will manifest its own specific results. Hence it will be seen that it is by inoculating with the blood of the syphilitic person as well as the vaccine lymph that syphilis is conveyed after the vaccine. This fact can not be too well impressed upon the mind: Never vaccinate with any lymph (or matter) that has one particle of blood in it. It is sometimes the case that the lymph in the arm of a syphilitic person will present a reddish appearance, or, in other words, there will be blood enough in it to cause it to look as if a little brick dust had been mixed with it. To vaccinate with such lymph as that would, in at least two cases out of three, produce syphilis.

We are told in medical works of numerous experiments where persons have been vaccinated from the arms of those who were known to have syphilis, and with no bad

results, *i. e.*, the syphilis not being conveyed. No mention is made of the color of the lymph. M. Trousseau's case was that of a young woman who was vaccinated from a child. It was not really known whether the child was diseased or not, and nothing is stated as regards the color of the lymph, or whether care had been taken not to have any blood in it. The young woman, however, had two undoubted syphilitic sores on her arm one month afterward.

The occurrence at Rivalton was, forty-six children were vaccinated from the arm of a child incubating syphilis, and on the tenth day afterward seventeen other children were vaccinated from the arm of one of the forty-six, making in all sixty-three. Of these sixty three forty-six had syphilis within two months.

In 1865 one person of a family living near Sumner, Kansas, was vaccinated, and at a proper time two others of the family were vaccinated from his arm. Soon, however, syphilitic sores appeared, and others were vaccinated from them, among whom was a healthy child, who afterward came to Franklin county, Missouri, where quite a number were vaccinated from its arm. About two-thirds of all who were vaccinated with that lymph had unmistakable syphilitic sores, many of whom I saw myself; the lymph presented that bloody or brick-dust color. Two of the family who were first vaccinated near Sumner, Kansas, are still suffering from the disease; their constitutions are seriously injured, and one of their arms is made useless by the terrible disease. One of them is a young lady. Her mouth has healed up twice so it had to be operated upon, and now it will only admit of the introduction of the end of a finger. She is much disfigured, and has been rendered a cripple for life. Her agony has been great, and she still suffers the most excruciating pain. They have spent five or six thousand dollars with medical men, and are still pitiable objects.

I call attention to these lamentable cases that others may take warning, and use greater care in the selection and introduction of the "matter" they use for vaccination.

Dr. E. C. Seaton, after discussing the negative of this blood theory at great length, says: "But while the communication of syphilis in vaccinating, through the careless inoculation of blood, must not be accepted as proved, it behooves the practitioner, bearing in mind the duty of avoiding every possible risk, to be more than ever careful to vaccinate only from the healthiest children, from the most perfect vesicles at the proper period of their course, and with pure, unmixed vaccine lymph, free from the slightest stain of blood."

A healthy child should thus be selected, and one, of course, with its first vaccination, as second or re-vaccination only produces spurious lymph in a majority of cases. The regular phenomenon of vaccination can only be produced once in the lifetime, so that if a person has been once vaccinated, and it "takes," as the saying is, it is folly, or worse than folly, to re-vaccinate, because the first vaccination will afford all the protection against small-pox that forty vaccinations would; and it is always attended with some danger to re-vaccinate, the lymph acting as an animal poison and giving rise sometimes to dangerous symptoms, and in a few cases on record even to death.

The vesicle is best suited to vaccinate from about the eighth day after it has been introduced into the child's arm, or, in other words, the day week after vaccination; the vesicle is then generally well formed, and that is the

proper time for vaccination. It is a great mistake to wait until it is old.

A healthy child being selected, and a vesicle fit for use, you can proceed to open it by a number of minute punctures, which must be carefully made on its surface, and not around the base. The object of many punctures is to open the various cells of the vesicle, and the reason for making these on the surface and not around the base is to obtain the lymph free from any admixture of blood. If by accident any blood be drawn, it must be allowed to coagulate and then be carefully removed before taking the lymph; for it is a cardinal rule, never to be deviated from, that the inoculation must be with vaccine lymph, and with lymph only.

When the cells of the vesicle are freely opened the lymph soon exudes and lies on the surface. A clean lancet may then be well charged with this lymph, and the operator may grasp the bare arm of the child with the left hand so as to put the skin on the stretch, the point of the lancet thus well charged with lymph may be inserted into the cutis; the lancet should not be held on a level with the arm, but at an angle of about 45 degrees. If the lymph thus well put in is retained by the valvular character of the puncture and the elasticity of the skin, any fear that the bleeding which ensues will cause the vaccination to fail is groundless. A minute and superficial puncture on the hand does frequently fail. About five of these punctures should always be made, never less, and if there is not room enough on one arm make one or two on the other.

Various other modes have been practiced, such as scarifying and then spreading the lymph over the scarified surface; also, by making a lot of cross scratches,

etc., etc. None of them, however, I think, are as successful or as simple as the one recommended above.

Now, the few points to be recollected are, 1st. To vaccinate all children from the third to the sixth month. 2d. To vaccinate from the arm of a healthy child as soon as the vesicle will do, or about the eighth day. 3d. Never allow any blood, or stain of blood, to be in the lymph. 4th. Be sure to introduce it well in at least five places, so that it may be certain to "take." 5th. Never re-vaccinate when you are sure the first vaccination "took well," which may be ascertained by looking for a few well marked pox or cicatrices.

SMALL POX—VARIOLA.

(German—BLATTERN. French—PETITE VEROLE.)

Small pox is a febrile, eruptive and infectious disease, the product of a morbid poison, which, after a period of latency, causes the development of an eruption on the surface of the body; this passes through the stages of pimple, vesicle, pustule and scab, and, as a rule, exhausts or destroys the susceptibility to the disease in the same person for the remainder of life.

The early history of small pox seems to be wrapped in much obscurity; there is nothing in history that would indicate that it was known at all to the Greeks and Romans. The earliest history we have is from Procopius, who lived about the middle of the sixth century. In the year 569, the year that Mahomet was born, it broke out in the Abyssinian army, under Abrahab, the Viceroy of Egypt, before Mecca, and caused a sudden retreat. Its mortality was very great, destroying a great number of that fine army. Rhazes, an Arabian physician, who flourished about the year 900, wrote extensively on small pox, and in his writings referred to others who had written about it, especially to Ahron of Alexandria, and Messue of Bagdad.

Tradition says small pox in man had its origin in the camel. If we reason from analogy, the tradition is not correct, inasmuch as all other diseases that have been

conveyed to man from the lower animals are not communicable by infection, only by inoculation. When once produced in man they are still not infectious, in the usual acceptation of the term, as small-pox is; only produceable again from one to another by inoculation, as in the instances of cow-pox, glanders, hydrophobia, &c.

Small pox appeared in England in 1847, in the sheep, as appears from a work by Prof. Simmons, veterinary surgeon in the Royal College, London.

SYMPTOMS AND DESCRIPTION.

It is called discrete when the pustules stand separately; semi-confluent when they partially coalesce; confluent when they join and run into each other; corymbose when the disease appears in patches; malignant when the eruption, besides being generally confluent, and the initiatory symptoms are very severe, with hemorrhage from the mucous surfaces, patches of purpura, and discolorations of the skin, as if having been bruised; benign when—although perhaps confluent—the eruption is superficial and the accompanying symptoms are of a mild character; anomalous when the disease is complicated with other diseases, eruptive or otherwise, as measles, scarlatina, pneumonia, whooping-cough, bronchitis, disease of the brain, &c.

Small-pox is divided into four stages—first, the stage of incubation, which lasts twelve days from the day of receiving the variolous germ or the contagion; second, the stage of initiatory or eruptive fever or invasion, lasting forty-eight hours; third, the stage of maturation, continuing about nine days; fourth, the stage of secondary fever, desiccation and decline, lasting, of course, an uncertain time, varying according to the severity of the disease.

Stage of incubation.—Small pox appears on the skin on the fourteenth day after the infection of the disease has been received into the constitution—the precise time being after thirteen times twenty-four hours have elapsed from the moment of taking the disease. This time will, of course, occupy twelve whole days and part of two others.

Stage of primary fever.—After twelve days' freedom from illness after the disease has been contracted there is severe indisposition for forty-eight hours, and then the eruption of small-pox begins to appear. The eruption appears first usually on the face, forehead and wrists, and then on the rest of the body; it is generally a couple of days later on the legs and feet than elsewhere. The eruption is at first papular, then vesicular, then pustular, and takes about eight days to arrive at its full development before the pustules begin to discharge their contents. During this stage the face and eyelids often swell and there is ptyalism (salivation), and the skin is remarkably tender.

Stage of secondary fever, desiccation and decline.—When small-pox is not of such severity as to destroy life by the eighth or ninth day of the eruption, there is a great increase of fever again, called the secondary fever, which is of vast importance and gives rise to a train of severe and complicated symptoms; concurrently with it the pustules discharge their contents and form dry, scaly scabs, and in favorable cases the disease begins to decline.

The first symptoms observed are rigors, fever, thirst, headache, sickness at the stomach, sometimes accompanied with vomiting, pain in the back and general indisposition, followed after forty-eight hours of this illness by an eruption on the skin of pimples, which are, as before stated, on the face. On pressing the fingers over the points of eruption some hardness is felt in the skin,

as if a grain of mustard was imbedded in it, but the skin is not tender at these points, nor does pressure seem to produce any pain.

In cases of small-pox after vaccination the true or distinctive eruption of small-pox is often preceded by roseola, which lasts two or three days, resembling very much scarlet fever; but this eruption may be known from scarlatina by not being so completely diffused over the skin as the rash of scarlatina usually is; it is also of a lighter, brighter scarlet tint.

Secondary fever.—Besides the initiatory fever of invasion in small-pox there is what is called the secondary fever, which begins, in confluent cases, about the eighth or ninth day. In milder cases of small-pox secondary fever is hardly perceptible; in the malignant and severely confluent cases death takes place before the secondary fever has barely commenced. But in most instances of confluent small-pox patients suffer more or less from secondary fever, which seems to be the cause or forerunner of a very important chain of events. The pulse is increased in frequency, there is thirst, dry tongue and hot skin; in many cases, particularly the plethoric, some local inflammation or exudations arise, it would seem either from slight injuries at the time or old hurts received many months ago; often there are numerous small boils.

Pleurisy is one of the most painful and fatal sequelæ of secondary fever of confluent small-pox; it generally terminates fatally in three or four days. Pneumonia, bronchitis, glossitis, olitis or erysipelas may either occur, but none are as fatal as pleurisy; still some patients who have pleurisy recover.

Variolous ophthalmia and corneal ulcerations, conjunctival inflammation, often begin on the fifth or sixth day in small-pox, continue a few days and then sub-

side under the use of simple remedies. But there is another form of mischief more serious—ulceration of the cornea—which often leads to the loss of an eye, both eyes being rarely affected, although this does sometimes happen. I have in my mind at this time a melancholy case that occurred a few years ago in Sedalia, Mo., where a lovely and estimable young lady lost both eyes from this cause. The injury to the eye by which the organ is destroyed is not from the pustules of small-pox forming on the eye, as used to be supposed, but from a destructive form of ulceration beginning almost invariably at the edge of the cornea. These cases are of very rare The ulceration of the cornea that leads to occurrence the destruction of the eye in small-pox begins after the secondary fever has commenced. The fourteenth day is the common time for it to be first seen. It comes on with a redness and slight pain in the part affected, and very soon an ulcer is formed, having its seat at the margin of the cornea almost invariably. This spreads with moreor less rapidity, according to the secondary fever. In the more violent cases the ulceration commences on each side of the cornea.

SUSCEPTIBILITY TO SMALL POX.

Each individual of the human species is born, it would seem, with a susceptibility to contract small pox, measles, scarlatina, and perhaps some other diseases belonging to what is called the zymotic class—those diseases which are produced by a morbid animal poison. There is in the organism, most likely in the blood, some inborn principle or ingredient, clearly not essential to life and well being, by which we are rendered liable to undergo these diseases.

Infectious nature of small pox.—All doubts have longsince been dispelled of the infectious nature of small pox. It is communicable from the very first moment when the initiatory fever begins. It may be given by the breath of the patient before the eruption has appeared on the body. It continues infectious so long as any of the dry scabs resulting from the original eruption remain adherent to the body; a single breathing of the air where it is enough to give the disease. The dead body for several days after death has been known to give the disease. Clothes will retain the infection for a long time unless they are thoroughly washed and exposed to the air.

TREATMENT.

"There is no specific for the cure of small pox." Dr. Gregory says: "It is a melancholy reflection, but too true, that for many hundred years the efforts of physicians were rather exerted to thwart nature and to add to the malignancy of the disease than to aid her in her efforts. Blisters, heating, alexipharmies, large bleedings, opiates, ointments, masks and lotions to prevent pitting, were the great measures formerly pursued, not one of which can be recommended."

One of the first things to be done is to place the patient in a large, airy room, which must be kept cool in summer, and in winter at an agreeable temperature. Formerly patients with small pox were kept as warm as possible; great heaps of bed clothes were piled about them—a horrible practice—all fresh air was shut out from them, and they were forbid any ablutions, or even change of clothes or bed clothes. We now use light bed clothes, frequent change of linen, fresh air and ablutions, and cooling drinks, with the greatest benefit to the patient.

In a great many cases it will not be known for the first

two or three days of small pox what febrile ailment is approaching; and even if it were known the mode of treatment would not materially differ. It will be right to give a dose of opening medicine to relieve the bowels, to keep the patient on simple diet, and to give saline medicines, such as the citrate of potash or tartrate of soda, in a state of effervescence.

In confluent cases of small pox it is necessary to cut the hair close; in the unvaccinated, especially in children, the sooner the better. But in the vaccinated exceptions may be made, to females especially—it is a great mortification to lose a fine head of hair; but if after waiting until the fifth or sixth day the disease is not modified, the hair then *must* be cut.

The diet of the patient should consist of tea and toast, without butter, bread and milk, milk and mush, rice, oatmeal gruel and baked potatoes. He should also have grapes, orange juice, strawberries, or apples roasted. For drinks he may use lemonade, toast water, imperial drink, apple water, tamarind water, or, what is more preferable, plain water, good and cool. Cordials are used by some under the rash notion of propelling the pustules toward the skin; this course is injurious and should never be allowed.

If delirium sets in in confluent small pox, as it sometimes does, in both plethoric and those of a weakly constitution, the plethoric patient should take a cathartic of citratized magnesia, while the weakly patient should take stimulants—either good Port, Clinton, or Norton's Virginia Seedling wine. Great care must be taken in discriminating between the plethoric and weak in giving the stimulant.

In the plethoric the first opening of the bowels may be by giving six or eight grains of calomel and as many

of rhubarb, with the addition of salts and senna in eight or ten hours if it do not operate. Two or three operations of the bowels may be produced daily for two or three days, but in the weakly salts and senna or the citratized magnesia is enough to commence with; and if afterward, through the course of the disease, the patient has one passage daily without medicine it is so much the better, but if the bowels do not move and the tongue is foul, salts and senna must be used to open the bowels once a day. Sometimes it happens that the bowels are too much relaxed; when this is the case the chalk mixture, with a teaspoonful of laudanum added to two ounces of it, must be given in tablespoonful doses to keep them checked sufficiently. If this preparation fail to stop the diarrhea, give a few grains, say four or five, of gum kino with each dose of the chalk mixture and laudanum.

If in the commencement of the attack the patient is restless and can not sleep at night, a dose or two of morphine may be tried, and repeated if it seems to do good, though very often it fails to do good, in which case it must be stopped. But it often happens that late in the disease the patient is restless and can not sleep; it is then that morphine will do good and must be given. Put four grains of morphine in an ounce of water and give from twenty to thirty drops at a dose.

Very soon after the secondary fever sets in the system will begin to require some additional support; beef tea or calves' feet jelly must be added to their diet, and wine becomes necessary. If the appetite is poor and great weakness is complained of, a grain or two of quinine with three or four drops of elixir of vitriol must be taken three or four times a day, and when the appetite begins to improve a little well boiled meat may be taken. Game, poultry and light boiled eggs may be

allowed, and in cases of great prostration brandy must be given.

Things in the unvaccinated do not always go on so smoothly as this; some large collections of matter may form, with sloughing of the cellular membrane, requiring to be opened, or numerous boils harass the patient. It often happens that matter is formed under the scalp, small in amount at first, but it goes on collecting and spreading, and there is no disposion to point and break in this part as in other parts of the body. These collections should be opened early to prevent their spreading; the operation is rather painful, from the thickness of the scalp. A simple incision does not answer well, and Dr. J. F. Marston, who has had perhaps as great experience in the treatment of small pox as any man now living, recommends a seton to be passed through the abscess so that the matter may keep constantly draining away. Those cavities are often tedious to heal, and will require a little touching with nitrate of silver to aid them in this process. During convalescence quinine and tincture of iron should be used. The discharge from the pustules in some confluent cases is considerable and acrid; the itching and discomfort produced by it on the skin are relieved by the application of flour or starch applied by means of a common dredging box dusted on the face and hands and inside of the shirt and sheets.

Many patients have numerous boils resulting from small pox. When this is the case a decoction of Peruvian bark or quinine and elixir of vitriol must be used, the vitriol in eight or ten drop doses in half a glass of water.

Some patients like cold, others like warm applications in erysipelas; some feel better with flour dredged over the inflamed part. If one plan does not feel comfortable another should be tried. A liberal supply of wine should be allowed, the same as in gangrene. Both erysipelas and gangrene are generally preceded by bilious vomiting and very often by diarrhea. During the sloughing of gangrene, at its commencement, nitric acid lotion, a drachm to a pint of water, may be used with benefit; later some antiseptic should be applied; a poultice of finely powdered charcoal and linseed meal may be applied. When there is any discharge from the genital organs, either male or female, they must be cleansed at least twice a day; if they are neglected gangrene is very likely to occur. This unpleasant office must be performed by the nurse, as the patient is not able to do it. It must not in anywise be neglected; the most serious consequences will occur if it is.

Pleurisy is one of the most dangerous complications that can arise in the advanced stage of small pox. About the only plan we can adopt in this emergency that would promise success would be to put a large blister on the affected side and give a full dose of morphine, which may be repeated in six hours if the pain has not much subsided.

Pneumonia is also a serious complication when it arises in the advanced stage of small pox, and does not admit of active treatment. A blister should be applied, and five grains of blue mass given at night for two or three nights, acetate of ammonia at intervals, a full dose of Dover's powders night and morning, and beef tea as a diet.

Bronchitis is another of the dangerous inflammations occasionally met with in advanced stages of small pox, which will not admit of much more than palliative treatment. A blister and opiates are all that had better be attempted, with good diet of beef tea.

Variolous ophthalmia and ulceration of the cornea are amongst the most serious results of confluent small pox. The patient must be put upon as generous a diet as can be borne, and allowed of wine three or four glasses a day, with tincture of Peruvian bark freely. The ulcer on the cornea must be touched with a strong solution of nitrate of silver (twenty grains to the ounce of rain water); as soon as this is done a drop of fine sweet oil should be dropped into the eye. This operation should be performed every day.

If the conjunctiva (white of the eye) becomes inflamed, as it sometimes does, and an ulcer after a few days is found on it, a weak solution of nitrate of silver (two or three grains to the ounce) may be dropped into it two or three times every other day.

One thing more only I will notice in the management of small pox. From the earliest periods in the history of small pox strenuous efforts have been made to prevent the "pitting" that takes place from this disease. It must be confessed that it sometimes disfigures the countenance terribly, and gives to the most handsome face a very common expression. We need not wonder, then, at the anxiety of friends, as well as of the patients themselves, that something should be done to prevent, as far as possible, future disfigurement. Some good can be effected, but when the disease is very severe the mischief arising from this cause can not be wholly avoided. Velpeau recommended, some years since, that each vesicle should be opened and cauterized with a stick of nitrate of silver. This must be done the third or fourth day. This might do in a mild case, but in a bad confluent one which is calculated to do great "pitting" it would not be at all practicable. Various other modes have been proposed that we have no time to notice here. Dr.

Marston, whose practice has been so extensive and so successful, says: "What we do generally is this: wait until the pustules have discharged and the discharge has begun to dry, then put on some of the best olive oil, or a mixture of one-third glycerine and two-thirds rose water. Some of this may be applied once or twice a day for a few days, until the scabs begin to loosen. Cold cream and oxide of zinc, or olive oil and lime water, form good applications; or, if the discharge is thin and excoriating, calamine mixed with olive oil. The patient should be warned not to allow the scabs to dry and remain sometime on the nose and other parts of the face, particularly on the forehead and near the end of the nose; when this takes place the dry scabs themselves leave deep marks in the skin worse than the eruption of small pox itself. The pain of removing the dry scab is sometimes considerable, and the patient can hardly be prevailed on to take them off, or allow others to do so." If this course is pursued the "pitting" will be very trifling, the result amply rewarding the pains.

SCARLET FEVER—SCARLATINA.

Scarlet fever is an acute specific disease caused by contagion, and contagion only. The earliest record we have of it is in 1556, the year in which Ph. Ingrassias published a description of it. It had, however, been previously recognized by the common people and called Rossalia. In 1676 appeared Sydenham's short chapter on "Febris Scarlatina."

In degree of contagiousness scarlet fever takes a place between measles and whooping-cough above, and typhus fever below-diphtheria being very far below. The contagious principle may be taken up by clothes, and retained by them for a great length of time; thus a strip of flannel is said to remain contagious for a year; so says Watson. Hilderbrand was infected by a cloak which, after exposure to the case, had been put aside for eighteen months. Hence we may assume that the morbific principle of scarlet fever is any thing but volatile or unstable, which being so affords an answer to the important question: When does a person who has recovered from an attack of the disease cease to be contagious? To speak strictly, not until those natural fomites, the epithelial scales, which were existing at the time of the fever, have been removed, or, what is nearly the same, not until disquamation has ceased; and in the fact that, under ordinary circumstances, those epithelial scales are all but permanently contagious. Uncovering a

scarlet fever patient in the direct rays of the sun, a cloud of fine dust may be seen to rise from the body—contagious dust which, no doubt, subsides into every crevice near the bed. The distance at which the disease may be communicated is commonly said to be not more than a few feet; yet, considering the slight volatility of the poison, one is quite prepared to admit the possibility of what is said to have occurred, namely, of the contagion having been conveyed hundreds of miles by letter or similar means.

A person who has passed through one attack of the disease is not so apt to contract it again. Still the possibility of recurrence and relapse is admitted on all hands. Scarlet fever appears at any season, but in this country the spring or fall is generally the time it is most prevalent.

The period of incubation is in all probability less than a week, and sometimes it may occur in twenty-four hours; it may sometimes, however, last more than a week. Like all other contagious diseases it varies, and we may put this variation at from twenty-four hours to ten days.

SYMPTOMS.

Scarlet fever is sometimes very mild, so much so as almost to escape the notice of either the physician or patient; and again it is so severe as to kill inevitably in twelve hours. Between these extremes lies a mean or typical form in which all the characteristic symptoms are well developed. Of this form we will proceed to speak. The first symptom noticed, particularly in adults, is sore throat, a tenderness at the angles of the lower jaw, and stiff neck soon follows. The onset, except in mild cases, is sudden; it is often easy to fix the hour and almost the very minute at which the disease begins.

Vomiting is the warning that children generally give; but not so with adults. It may be repeated many times, becoming ultimately bilious. The first febrile symptoms is often, not always, a sensation of chilliness, never rigor; the face is pale. Flushing of the face and great heat rapidly succeed, with a high temperature of the body. The pulse is remarkably frequent, out of proportion to the height of the fever. The respiration is in proportion to the pulse. No cough. The tongue mostly covered with a light white fur, except at the tip and edges, which are red; in some cases it remains quite pale, clean and moist. There are loss of appetite and thirst in marked cases of the disease. The skin is hot, but not necessarily dry. There are numerous symptoms present, languor, sleepiness by day and disturbed sleep at night, with some delirium. Lastly, in mild cases, mere "poorliness" the day before the eruption is often the only premonitory symptom.

The duration of this stage of the disease is, as a rule, from twelve to thirty hours. In trivial cases the rash is sometimes the first symptom of the disease.

The Rash.—The normal exanthem consists of small dots, in color bright scarlet, most intense at the center of the dot, fading toward the edges; confluent by their margins, so as not to leave any skin of normal appearance between; not elevated to the touch; completely disappearing under pressure, and rapidly reappearing when the pressure is removed. The rash generally comes out first on the sides of the neck and upper part of the chest, but sometimes over the whole body at once. This rash or eruption reaches its maximum extent and intensity on the third or fourth day of the illness (sometimes earlier), and begins to fade on the fourth, fifth or six days, and lasts altogether from five to ten days.

Sore throat is always present in some degree; on examination it will be seen that the palate, uvula and tonsils are very red, and sometimes much swollen.

The fever runs higher than in measles, but not so high as in intermittent and remittent fevers. On the day the eruption begins to fade the fever frequently submits to a complete crisis, as indicated by the temperature not rising above the normal for twenty-four hours. Should this crisis not occur the disease will be prolonged for an indefinite period. These are the symptoms of ordinary scarlet fever; but there are other forms, termed the malignant and the *latent*, or *simplex*. In the malignant the severity of all the symptoms are augmented. This term or epithet, malignant, is rather a loose term, and is used whenever the life of the patient is threatened in the first or second week of the illness, and is applied not only to cases of sc. maligna proper, as above defined, but also to cases of ordinary scarlet fever, attended with complications, ulcerated sore throat, inflammations, hemorrhage, &c.

The severer, the more pyretic forms of ordinary scarlet fever, merge into a type of malignity characterized by excitement, followed by exhaustion. There are all grades of severity between this, the least grave form of malignity and that which places scarlet fever almost on a footing with Asiatic cholera and the plague, that form in which a preliminary period of excitement is hardly to be perceived, so rapidly does collapse follow upon the onset of the disease (adynamic, congestive, protopathic malignity).

LATENT SCARLET FEVER.

In this the symptoms are so ill-developed as to be not characteristic or not observed. Examples of Sydenham scarlet fever—disease by name alone—hold a mid place

between this *latent* and the regular forms. However mild the primary disease may be, the gravest sequelæ may ensue.

TREATMENT.

This disease belongs to that class that has a certain course to run, and of course can not be "broken up," but must be carefully guided through, if possible. A large part, then, of the treatment of a case of ordinary scarlet fever may be summed up, as Dr. Samuel I. Gee, of London, says, in "nursing." He adds: "The patient should be put to bed, as a rule to which there is no exception; the bed clothes should be those to which he has been accustomed in health, and no more; carpets and porous materials must be removed: the bed-room should be carefully ventilated, bearing in mind that there is no special reason to fear cold during the first week; the whole surface of the body should be sponged with tepid water once or twice a day, and subsequently to grease the skin with mutton suet often brings comfort to the patient. The diet is to be unstimulating, consisting of milk, the farinacea, an egg, light pudding; drink should be freely supplied—iced water or iced lemonade or toast water. Purgatives are to be avoided. Dr. W. T. Gairdner says: "Another disease will not be easily found in which delirum is more common and less dangerous: in scarlet fever the patients wander even on the first day, and sometimes, although they are free from any other sign of danger, they do not cease to talk at random every night from the beginning of the disease to the end." Delirium, however, to be an unimportant symptom must be isolated; severe vomiting, diarrhea, any unusual symptom referable to the nervous system concurrent with delirium, make it grave in a prognostic sense. In many cases a consideration of the previous and present

condition of the patient will indicate the administration of wine; the child seems low, the pulse is not only frequent, but soft and feeble, there is possibly coryza present; at the same time full doses of carbonate of ammonia should be given in milk every four hours. And it must be conceded that no great harm comes from the moderate employment of stimulants, even when they are not absolutely necessary.

When the throat is much inflamed great relief may be afforded by the free use of ice, the patient allowing a lump of it to dissolve in his mouth; under this treatment the soreness often passes away in a short time. The puffy swellings of the neck may be removed by the use of a warm linseed meal poultice, often renewed. When the coryza is troublesome the nose must be syringed with a weak solution of nitrate of silver, four grains to the ounce, or with strong salt water, warm. Dr. Lee says: "Of the remedies employed in the treatment of the malignant form of scarlet fever there is one which stands out from among the rest—the cold affusion. Yet it is not of equal value in all cases. From the days of Currie downward the ataxic form of the disease, characterized by delirium, diarrhea, vomiting, full pulse and great heat of skin, has been recognized as the special indication for this active treatment. The patient is to be seated naked in a bath, two or three buckets full of water at 70° Fahr, are poured quickly over him, so that the affusion does not last longer than half a minute; he is then returned undried into bed and laid between blankets. The first affusion having had a markedly beneficial effect, should the indication symptom return in the course of the same day or next, the water treatment may be repeated, and this even two or three times if necessary. When this treatment has been objected to or has seemed too bold, I have seen very good results follow from packing the patient in a wet sheet for an hour. A still milder method remains to be mentioned—that of occasional cold sponging. Ammonia and brandy are nearly always needed, sooner or later, by these patients." In the more prolonged cases quinine must be used in connection with the ammonia and brandy. A most nutritious diet in connection with these will often enable such patients to recover.

"However favorable an attack of scarlet fever, the patient should be kept," says Dr. Lee, "in bed for three weeks from the commencement of the disease; he may then get up, but he should not leave his room for another week."

If on the morning of the fifth or sixth day any ulcerous appearance that the fauces may have previously presented does not show signs of yielding, it is well to cauterise the morbid surface. For the tonsils undiluted hydrochloric acid is to be used; for any part of the soft palate solid nitrate of silver. These applications must be made but once, or if they are repeated it must be after four or five days. The external swellings must be continually poulticed with the flaxseed meal, and as soon as pus has formed, however small the spot, an incision must be made into it and the matter let out, then resume the poultice. A free discharge of sloughs and ichor affords the patient his sole chance. Should hemorrhage occur, the wound is to be stuffed with lint soaked in a solution of perchloride of iron; this moderate pressure will stop the bleeding, which is oftener venous than arterial.

If swellings occur in the ears they must be syringed with warm water frequently. Should a discharge, either

from the ear or nose, become chronic, quinine and elixir of vitriol must be taken.

The suppurative tendency is an indication for quinine, fresh air and substantial food. All abcesses are to be opened early. The treatment of rheumatism when it occurs in scarlet fever is palliative; Dover's powders to allay pain, diluents for concentrated urine, aperients if necessary, and poultices to the affected joints.

Sloughing of the cornea would probably be preventable in many cases by the simple expedient of keeping the eye shut, as recommended first by Trousseau.

MUMPS—PAROTITIS.

CYNANCHE PAROTIDEA. German, ZIEGENPETER.

Mumps is an acute disease, characterized by a lesion on one or both parotid glands. It is a

CONTAGIOUS

disease, not usually occurring a second time, subject to epidemic influences, and said to be most common in spring and autumn. Its period of incubation varies from eight to twenty days.

SYMPTOMS.

The first symptom usually noticed is a sensation of chilliness, rarely amounting to rigor, pain in the head, back and limbs; the pulse and respiration are both accelerated. In a few hours there is a pain felt in one or both parotid glands, followed shortly afterward by swelling of the glands and stiffness of the jaws. These glands are situated immediately beneath the ear and back of the jaw—the lock of the jaw, as I have heard it termed. The pain and swelling first appear immediately beneath the ear, and posterior to the ramus of the jaw, and from this part spread in all directions, upward to the face, and downward and backward into the neck. The swelling disappears in the inverse order of its invasion.

A common mode of diagnosing when this disease is suspected by the common people is to have the patient.

take something acid into the mouth, such as vinegar, sour buttermilk, etc., which produces a very unpleasant sensation, and one the patient will not be likely to bear long.

The termination is almost always favorable, but from carelessness or other causes the disease may affect other organs. In many the testicles, one or both, may suffer; whilst in the female the mammæ (breasts), laba majora (lips of genital organs), and uterus are the parts occasionally attacked. The tonsils and pharynx may also be involved.

The duration of the disease is from four or five to ten or twelve days. The pain and swelling under the ear are its characteristic symptoms; and when it prevails epidemically, or to any extent by contagion (which in fact is the only way that we positively know that it can prevail, the epidemic being more or less speculation), there will be no difficulty in recognizing it.

TREATMENT.

In common with other acute specific diseases, mumps has a certain course to run, and can not be arrested in its course by any mode of treatment. All that can be done, then, is to mitigate the severity of the symptoms, and thus conduct the disease to a favorable termination. For this purpose but little treatment is required. In order to prevent any metastases, or transfer of the disease to other parts, the patient must be put to bed and given a mild dose of some saline cathartic; active purging must be avoided.

Rest must be strictly enjoined on the patient, for it is found that in all febrile diseases exercise always increases the febrile excitement. Morphine in moderate doses, say one-fourth of a grain to an adult, should be given to ease the pain and promote sleep.

The appetite must have strict regard paid to it, for the increased waste of the tissues is compensated for in proportion to the amount of food digested. Should no food be taken or assimilated, the patient is placed in all respects in the position of a starving person, and to this must be added an active, increased consumption of the To secure or promote the appetite and proper digestion of the food, attention must especially be paid to pain, sleep and the nature of the food. Pain, if severe, destroys entirely the appetite and arrests the digestion of food; therefore, if the pain in the affected organ is great, it must be allowed by the use of morphine, as above stated, or by what is really better in this case, Dover's powders, in from five to ten grain doses. Hot fomentations or poultices will be found serviceable in relieving pain. The thirst can be removed by sucking ice. The food should be selected with two objects in view-first, that it shall not need chewing, for that would increase the pain in the affected part; second, that it is nutritious and easy of digestion. With these objects in view, milk and mush, eggs, rice, beef tea, or good strong mutton or veal broth may be used. It must be remembered that digestion is generally poor in all febrile diseases, hence the food must be given in small quantities and often. If the case is protracted or the patient is very weak from previous disease, good wine or brandy must be given.

Owing to the mildness of this disease, and its almost universal favorable termination, but little treatment is necessary; but it must be remembered that even mumps sometimes terminates fatally, and at other times, owing to the implication of other organs, becomes quite a serious disorder. It is always best to use great care and if possible avoid such results. This may always be done by a proper course.

CHICKEN POX—VARICELLA.

This is a contagious febrile disease, which is attended with an eruption of vesicles; does not last longer than a week, and does not recur a second time in the same individual. It is very mild and never terminates fatally.

SYMPTOMS.

Slight feverish symptoms precede the eruption by a few hours. The eruption appears in the form of small rose spots, from ten to fifteen coming out on the first day on any part of the body. On the second day there may be a hundred or more, those of the first day having by the second a clear water in them, the patient having the appearance of having had a shower of scalding water upon him. This nocturnal outburst of spots is repeated for four or five successive nights, the spots becoming vascular in ten hours, which soon become "scabs."

TREATMENT.

Children should be as much as possible prevented from picking the scabs, on the face at least, for fear they should leave marks or pits. A little wine, brandy or quinine may be given, especially during convalescence. Care is all that is generally necessary.

DIPHTHERIA.

CYNANCH, ANGINA.

This disease is both *epidemic* and *contagious;* it is a special inflammation of the mucous membrane of the throat and air passages, attended with enlargement of the lymphatic glands.

The disease is accompanied by great prostration of the vital powers, and is followed by a remarkable series of local lesions of innervation.

There is little doubt that diphtheria, like other acute specific diseases, has existed as long as the history of man extends. We have traces of it two thousand years ago, and the description of it more than a thousand years since applies equally to its appearance in our own day. It is not difficult to recognize during its epidemic prevalence; at other times its distinctive characters have been merged with those of scarlet fever and erysipelas. There was no discrimination made in these diseases even in Sydenham's time. Hippocrates describes it, and gives us the name of, probably, its first recorded victim. Hippoc., Epid. lib. v, tex. 57. Aretæus is the founder of both our knowledge and treatment of the disease. It is impossible to say which one of the many plagues of the dark ages of history may claim this disease as its agent.

The recurrence of diphtheria more than once in the same subject is not settled so conclusively in the affirmative as has been generally supposed. That the same person may be repeatedly attacked with the slighter forms of the malady, and that some are so on the slightest exposure, is frequently observed; but when the fully formed disease has been undergone, though relapses are to be feared in convalescence, even during the whole of the subsequent period of debility, which may be prolonged for two or three months, independent recurrence is rare, and a less tendency to the disease is observed.

SYMPTOMS.

Constitutional symptoms precede those occasioned by the concomitant local changes. Among the earlier symptoms are yawning or sighing, shallow and infrequent respiration, great lassitude and debility (this symptom is observable throughout the whole course of the disease and is one of its characteristics), there is some aching of the back and legs, chilliness, pallor, a sense of nausea or rising in the throat, sometimes vomiting, and in children diarrhea, headache or a sense of constriction across the forehead, vertigo, extreme muscular weakness, an altered mental state, slowness of recollection, an indifference of manner, and an obtuseness of the mental faculties; this latter will sometimes give place to slight excitement at night, when wakefulness or restlessness is almost always to be observed. The pulse is accelerated, and in children or young persons may rise to 120 or even 140 beats in a minute; this soon subsides, always before the end of the second day, and though the pulse continues to be quick it is either feeble or easily compressed. The breathing is never proportionably accelerated at this period. The tongue is moist, with a thin, creamy fur; the urine is pale in color, at first free, but soon rather less in quantity; there is redness, with a little swelling of the

posterior part of the soft palate, of the fauces, and of the tonsils. The throat is sore, swallowing is difficult if not painful, and sometimes pain is felt in the ear. The earliest evidence of the disease is found by a deposit of the exuded serum in the follicles of the tonsils or on their inflamed surface.

The first general symptoms are transient, and may be so trifling in degree as to escape notice until they are intensified by the progress of the local lesion; this will give rise to pain, heat and soreness of throat, with impeded function; it also excites some sympathetic febrile disturbance of its own, and always increases that proper to the general disease; where both are severe, the throat, though covered with exudation, is often the least part of the patient's complaint; where both are slight, there may be an interval in which little complaint is made. During this interval, which will not exceed two days, there may be no visible exudation in the fauces; the tonsils continue to be enlarged and their surfaces irregular, and they, in common with the whole of the pharynx, the arches of the palate, the velum and the uvula, are of a deep red color and unequally tinged; one side is generally the most affected. The uvula is enlarged, red and glistening, and a mottled redness extends forward from it over the soft palate, but the rest of the membrane is pale. Some of these parts soon appear more tumid and glistening than others, and spots at first semi-transparent, afterwards opaque, rapidly form and coalesce, so that in a few hours a large surface may be covered with a continuous layer of exudation.

A careful inspection of the fauces will, in the majority of cases, be conclusive as to the presence of the disease; when a yellowish patch of exudation, moulded to the surface it has invaded, is thus brought into view, the nature of the serious illness, which may have been obscure, is at once revealed.

As above remarked it will not be difficult to diagnose this disease when it prevails as an epidemic.

No case of diphtheria is to be regarded without anxiety; every danger incident to the disease may result, though the early symptoms are but slightly marked. The successive appearance of fresh patches of deposit, or of other signs of the disease, excites alarm, lest its next local manifestation should be in the larynx. This the young or the feeble would scarcely withstand.

TREATMENT.

The general therapeutical indications are of primary importance throughout; they consist neither in attempt to nullify a poison by specifics nor to expel it in elimination, but in withstanding the encroachment of the disease and in *sustaining* the vital powers.

Complete rest and purity of air are essential. The first general symptoms should be met by alcoholic stimulants, freely administered; there should be good brandy or wine—the brandy in the form of a toddy. These are more directly serviceable in the earliest stages of the disease than even in that part of its course when they become indispensable. A rapid pulse indicates their employment, and heat of skin is no counter indication. One or two five grain doses of quinine should be given when there is either vertigo, headache or vomiting; soon afterward beef tea, eggs, or even more solid food, can be taken, as well as the brandy or wine; milk, in any form, is always suitable. The night must not pass without either nourishment or stimulant being given, or both. Wakefulness or nocturnal delirium is often thus obviated. Sometimes a dose of morphine or

opium has to be combined with the stimulant on the second or third night if restlessness then persists; in fact morphine or opium may be given in small doses from the first, with the stimulants, with advantage.

When a patch of exudation is already apparent a solution of nitrate of silver should be applied, so as to thoroughly come in contact both with the patch and the turgid mucous membrane surrounding it. The strength of the solution should not exceed the proportion of one part of nitrate of silver to three parts of water (the water used with nitrate of silver must always be rain or soft distilled water). The superficial whiteness left by it will clear off in twenty-four hours, and is easily distinguishable from the points of exudation. A mixture of hydrochloric acid and honey in equal proportions or with one or two parts of water is as effectual in checking the progress of the exudation, but leaves a more persistent white mark. These applications, when seen to be efficient, need not be repeated; care should be taken that no excess of them reach beyond where they are required. The strong acid and solid nitrate of silver are both objectionable. When there is much redness and pain, a weaker solution of nitrate of silver—one part to eight or twelve of water—penciled over the whole surface tends to prevent further exudation and affords relief to the local discomfort. Hydrochloric acid diluted with five or six parts of water may be applied in the same way with the same effect. As soon as nourishment, however light, can be retained by the stomach five to ten grains of the perchloride of iron, the equivalent of twenty or forty drops of the tincture, should be given with not less than half an ounce of water and half a drachm (half a teaspoonful) of glycerine; this should be repeated every three or four hours or even more frequently. It should be commenced

on the first day of the illness, or as soon as the patient comes under notice, and continued until the tongue becomes red and the throat improves. When deposit has already taken place the good effect of the remedy will be shown, not by any alterations in the dimensions of the patch, but by a diminution in the accompanying secretion and by an improvement in the general symptoms. It is not to be discontinued for some days, and may require energetic repetition if improvement is slow in appearing. The tincture of the muriate of iron in twenty to forty drop doses in half a tumbler of water will answer the same purpose of the other preparation.

A local as well as a general influence is exerted by these agents; they have a constringing effect on the vessels, and their action on the decomposing exudation is antiseptic. Difficulty of swallowing is often a serious aggravation of the illness. Lime water may be used for a week as gargle or glycerine applied with a camel's hair pencil, either of which alleviates; so also does an injection of cold water into the pharynx. Ice in small pieces dissolved in the mouth is at once the most grateful as well as the most useful appliance. A weak solution of borax or alum with glycerine or honey or a strong solution of chlorate of potash are useful where there is much tenacious secretion.

As long as solid food can not be taken it is to be noted with the greatest exactitude that the quantity of the liquid nourishment and of stimulant administered in the twenty-four hours is equal to the estimated requirement of the patient; the less the quantity of nourishment the greater must be the dependence upon the stimulant. The youngest children may require a teaspoonful of brandy every two hours, and a child of three years old two teaspoonfuls. This may be given diluted any way and in

very small quantities, frequently repeated. Older children or adults take it best mixed with ice water or soda water. Norton's Virginia Seedling wine is a good substitute and will prove a valuable article in the treatment of this disease.

At a further period of the disease, when the separation of the deposit is completed, extra stimulants are required to combat the restlessness and depression then sometimes extreme. Sleep, at all times necessary, is at this latter period of the illness to be carefully conciliated. Opiates are well borne, and are now more likely to procure sleep than when the first symptoms in the throat are most troublesome; their use for several nights, when the diminished exudation reveals injury of the mucous membrane, may do much to prevent the exhaustion at this time so dangerous. Quinine and barks at this period must be freely used.

Aperients are seldom required at the commencement of the illness, and during the earlier stages their effects seem to be injurious, for then the waste of tissue is most active and the impediment to the reception of nutrition the greatest. If diarrhea set in it may be controlled with opium or opium with bismuth. The constipation of the latter stages of the illness require stimulating injections. Cold water or iced lemonade should be allowed through the whole course of the disease.

If suffocation is about to take place tracheotomy should be performed; for this purpose the services of a surgeon must be secured. After the operation the chief condition of success is efficient support. The tube must remain in the trachea for at least a week.

The after treatment of diphtheria requires great care in proportioning the amount of exertion to the degree of

strength existing. Good food, good air and tonics are necessary.

Mercury, if continued to its general effect in this disease, would prove of much injury, while bleeding is wholly inadmissible, the principle being to sustain the system while the local symptoms are being combated and the lesion removed.

The disease is a dangerous one, and when it prevails in the epidemic form brings with it great consternation and destruction; but if carefully treated on the above principle it is disarmed of its terror and is more or less tractable. It, like croup, should receive early attention, to be treated successfully, and furnishes another reason why every one should be acquainted with diseases and their therapeutics.

MEASLES-FLECKEN.

RUBEOLA.

Measles is an acute febrile contagious disease, mostly occurring in epidemics. It generally attacks the patient but once; sometimes occurring again, but very seldom. It often co-exists with other epidemics, particularly whooping-cough. The one epidemic seems to predispose to the other, and when it follows whooping-cough the cough is generally prolonged. The period of incubation is from seven to ten days; it is produced by inoculation in seven.

SYMPTOMS.

The disease is generally abruptly ushered in with chilliness and rigor; and sometimes in children by convulsions; or, on the contrary, the invasion is so insidious that it is impossible to determine with accuracy the first day of attack. The establishment of the disease is accompanied with a degree of prostration, enough to plainly suggest to the servants of nature the principles of treatment. The patient takes involuntarily to bed, and is indisposed to either physical or mental exertion. He is fretful and irritable, in some cases only when disturbed; in others they are constantly restless, whining and peevish—differences dependent on peculiarities inherited or developed by bad education. The expression is vacant, and the powers of perception and reflection

are much impaired. Delirium is in some cases present, always slight, and usually limited to the night. The skin is hot and dry; the lips are parched, and in severe cases covered with sordes (dark deposit). The tongue is coated, the appetite is much impaired, and the thirst extreme. Vomiting, when present, indicates a severe attack of the disease. The eyes are generally a little red and suffused with tears, and easily affected by light. There is sometimes frequent sneezing, accompanied by a watery discharge from the nose, resembling the commencement of a "cold." The mucous membrane of the mouth and throat is mottled with redness. The throat is sometimes sore; the cough is dry and hacking. The voice is often hoarse.

Usually on the fourth day from the commencement of the disease the characteristic rash appears. First noticed on the forehead close to the scalp, and on the chin, it from thence spreads over the face, trunk and extremities, in the accomplishment of which it occupies a period occupying from two hours to two days. On the appearance of the rash the fever is stated to increase—it certainly does not diminish. The watering and redness of the eyes increase. There is slight swelling of the whole body, more noticeable in the face.

After the second or third day of the eruption the fever disappears, the temperature becomes normal, the pulse much less frequent, and the patient at once enters on the period of convalescence.

The severity of the disease varies greatly. This has led to the division of it into three forms. The mildest form the learned doctors call morbilli sine catarrho, the next or middle form morbilli mitiores, and the malignant or worst form morbilli graviores. This is the form that we sometimes hear termed the "black measles," or by

some the "French measles." This form, it would seem from medical history, was far more prevalent formerly than now, still cases do now and then present themselves. In this form the rash often only imperfectly appears, and is of a livid, purplish, or even black color—from whence its name. In these cases when they terminate fatally it is generally from diarrhea or bronchitis.

This malignant form of measles is always attended with danger; it often becomes complicated with such formidable diseases as pneumonia, laryngitis, bronchitis, or acute tuberculosis (consumption). Besides those, many dangerous and troublesome sequelæ often follow in its "wake."

TREATMENT.

Dr. Sydney Ringer, to whom I am indebted for much of the information in this article, and who acknowledges his indebtedness to Williams, Armstrong, Trousseau, Graves, Hebra, Rilliet, Barthez, Aitken, Parks, et al., says in regard to the treatment of measles, "Not possessing any medicine capable of shortening the duration of the disease, it must be our object in treatment to conduct the fever to a favorable termination, and to ward off any intercurrent disease." The remarks made respecting the treatment of measles of course apply for the most part to all febrile diseases, and especially to those of long duration.

The patient must be confined to bed. Too much light should be excluded, for strong light is annoying to all febrile patients, and in measles causes some pain in the inflamed eyes.

The room should be well ventilated; all excreta and dirty linen should immediately be removed. The patient must be most carefully protected from drafts. The sense of heat and dryness of the body, sometimes most dis-

tressing to the patient, can be much alleviated by washing the surface with soap and tepid water; too great exposure avoided by one part of the body being cleansed, dried and covered before the rest is exposed.

All sources of annoyance or irritation, and all noises, should be avoided, and thus sleep be promoted—a condition which most materially affects the welfare of the patient—sleep lessening the fever and increasing the Food, light and nutritious, such as rice, gruel, beef tea, chicken broth, milk, jellies, etc., etc., should be given at the usual meal hours. The quantity should be moderate, care being taken not to give enough to impair digestion. There is no stimulant so important as food. The prospect of recovery in all acute febrile diseases is very greatly, if not mainly, dependent on the power possessed by the patient of digesting and assimilating food. If there be oft-repeated sickness (as there often is in "black measles"), which is an unfavorable symptom, for sickness itself very greatly prostrates the patient, and by the vomiting the nutritious matter is returned—nay more, the vomiting is due to a condition of the mucous membrane of the stomach and alimentary tract most unfavorable to digestion—in this case food of the blandest form, such as "Liebig's beef tea"—which is made by cutting one pound of beef very fine, pouring on it one pint of water, to which has been added thirty drops of hydrochloric acid and forty grains of salt, allowing it to stand three hours, then strained and strongly expressed, when it is fit for use—should be given. The uncooked white of an egg, well beaten and diluted with water, with a little crushed sugar added, should also be given.

The thirst may be allayed by cold water, which should be taken in small quantities and swallowed slowly.

One-fourth of a pint of water swallowed very slowly will do more toward quenching thirst than a pint swallowed in great haste. This is a fact that it is well for all to remember. A person that would drink rapidly three or four tumblers of water in succession would scarcely consume one if he would take a teaspoon and dip it out and swallow it a spoonful at a time. A small lump of ice held in the mouth, swallowing the water as it dissolves, is a good way to allay thirst without taking too much water into the stomach. The objection in measles to taking too much water into the stomach is that it tends to impair digestion, and sometimes causes diarrhea. The patient, however, must be permitted to take larger quantities of fluids than in health, as an increased quantity is required by the system during the existence of fever. Lemonade is a useful drink in measles, and in fact in all febrile diseases, and is always grateful to the stomach.

Stimulants are administered to support the strength of the patient. This they do in a great measure by promoting digestion, and also by directly increasing the heart's action. In cases where the patient has been in rather feeble health previous to the attack, or where there seems to be much prostration, the administration of stimulants must be commenced early in the disease, and used to such an extent that the system will be sustained; by this means many of the troublesome sequels will be avoided. If the patient is robust and can take nourishment, it will scarcely be necessary to use stimulants in any of the early stages, but it will always be found necessary before the close of the disease to use some. Alcoholic stimulants in some form or other will be found the most useful in measles.

In the commencement of an attack of measles the bowels should be opened. This may be done with a

small dose of castor oil, or by the use of the syringe—the latter means being preferable. The bowels are very easily acted upon in measles; this must be remembered, and no active cathartic given.

If bleeding at the nose supervene it must be stopped. This can usually be done by injecting into it cold water; if this fail it must be plugged.

If any complications arise they must be treated according to their nature, remembering that no kind of depletory treatment can be borne by a patient with measles. With this plan in view, use what is indicated by the symptoms.

A proper amount of sleep is absolutely necessary, as well as a proper amount of digestible food. Opium will seldom be necessary in the treatment of measles; but if sleep can not be procured without it, it must be used.

It may be wondered at by those who have been in the habit of drenching patients with hot tea, hot whisky toddies, &c., that I have not recommended some of these articles to "break out" the rash or "measles." I have not done so simply because they are not indicated, and because they do the patient a positive injury by filling the stomach with fluids, thereby impairing digestion, a thing all important in the successful treatment of measles. Now, I hope this hint will be sufficient; and when the poor sufferer calls for drink to quench a thirst that is consuming him he will not be given hot tea, made, as is often the case, from the excrementitious matter of the sheep, or made out of pepper, or some other article not calculated to quench his thirst. The patient with measles feels, perhaps, about as badly and mean, as disagreeable and trifling as he possibly can. I have often been reminded when seeing a patient with one of the "bad" forms of measles of a remark a little niece of mine, about five years old, made just prior to the coming out of the measles rash on her. After several most piteous groans she remarked, with much earnestness, that she "wished she never had been any thing," and that she was "not very much as it was in this fix."

The very mildest form of measles scarcely needs treatment at all, farther than to keep the patient comfortable and in bed. Like many other contagious diseases, the young suffer less with it, as a rule, than those advanced in life.

Inoculations for measles may be done and the disease avoided altogether, but there does not seem to be terror enough about the disease to cause persons interested to feel much interest in inoculation. It is thought to be more contagious than either small-pox or scarlet fever.

WHOOPING-COUGH.

(Cullen), MORBUS CONTAGIOSUS.—(French), CO-QUELUCHE.—(German), KIK HUSTEN.—(Technical), TUSSIS CONVULSIVA.

This is a convulsive cough, consisting of a long series of forcible expirations, followed by a deep, loud, sonorous inspiration or *whoop*, and repeated more or less frequently during each paroxysm; occurring usually in *childhood*, and *once only* during life, continuing several weeks.

No writer before the middle of the seventeenth century had described this disease; from this fact we are led to believe that the disease was unknown to the fathers of medicine, for it is difficult to believe that a disease having characteristics so well marked as this could escape their attention, and a description of it be given so that we could recognize it. Diseases having a contagious or epidemic character, and resembling "whoopingcough" in its catarrhal symptoms, were clearly known to Hippocrates and others before the Christian era, and have been described by Arabian, Italian and French authorities down to the sixteenth century, but lacking the distinctive character of the whoop. They more nearly resemble influenza than any disease now known to us. Hence its history can not be traced back more than about two hundred years. It is claimed, however, that it has been known traditionally by the French for over three hundred years. This is doubtful.

CAUSES.

There is no known specific cause to which it can be attributed; but that atmospheric influences are chief exciting causes may be inferred from the fact that it has often occurred as an epidemic, and that it is most prevalent at certain seasons of the year. The imperfection of our knowledge in reference to atmospheric influences other than temperature, and the absence of registration of the prevalence of diseases which do not end fatally, prevent a more minute inquiry into this relation. fact that whooping-cough is, without a reasonable doubt, a contagious disease implies a materies morbi, generated or at least acting within the body, is communicated from one person to another, and that the atmosphere is the vehicle for its transmission; but as we know nothing of the nature of this materies morbi within the body, so we are equally ignorant of its character when existing without it.

SYMPTOMS.

The early evidences are those of simple catarrh without any, or with scarcely any, febrile complication. They are coryza, secretion from the nose, cough more or less severe, but not at this stage spasmodic, with frothy and watery secretion from the bronchi, lassitude, restlessness, and some diminution of appetite. After a period the cough becomes a more marked symptom, and is louder and more prolonged than an ordinary cough, generally putting on a spasmodic character. When the nature of the disease has become quite clear the cough is found to occur in paroxysms, during which the body is bent forward and a series of short, very rapid and violent expirations occur

and continue until the face is extremely suffused and the respiration seems almost to have ceased, when a deep, prolonged, loud and crowing inspiration takes place. This alternation occurs two or three or more times in each paroxysm. The attack terminates with the emission of a somewhat large quantity of semi-transparent, glairy and very tenacious mucous, which hangs about the mouth and lips, and not unfrequently with vomiting. In mild cases the disease may soon end; but in more severe cases there remains much exhaustion and emaciation, attended by an insufficient appetite and increased sensibility of the stomach, which leads to vomiting from trivial causes. The skin is usually soft, and at the end of a paroxysm is bathed in perspiration. Bleeding from the nose is a very frequent attendant upon a severe attack of whooping cough. In a typical case the catarrhal symptoms, without spasmodic cough, continue about two or three weeks, and the spasmodic cough for three or four weeks. whilst after the spasm has ceased and the cough has become again catarrhal the duration may be short, if the child has not been too much enfeebled; otherwise it will be prolonged for some weeks.

Whooping-cough may be complicated in two ways—when the cough supervenes upon some other disease and complicates it, and when whooping-cough is primary and other diseases arise in its course. The former class is a somewhat extensive one, but for the most part is limited to diseases, such as measles, which involve bronchial affections in their course; the latter, however, only will be considered here. The complications are of four kinds, viz.: disease of the lungs, disease of the brain, infantile remittent fever, and vital exhaustion. The last may be regarded by some as a sequel of uncomplicated whooping-cough; but when it is considered that the almost infinite

proportion of the cases of simple whooping-cough end favorably with only a moderate state of exhaustion, it will be thought better to regard the very exceptional occurrence of fatal exhaustion as a complication rather than as a sequel to the simple form. The pulmonary complications are: congestion of the lungs, emphysema, atrophy, bronchitis and broncho-pneumonia. A certain amount of congestion of the lungs is found in all cases of severe whooping-cough, and is due perhaps exclusively to the interference which occurs through the respiration and with the pulmonary circulation, and it is one of the sources of danger attending the disease.

Emphysema (infiltration of air into the cellular texture), although usually regarded as a sequel of the disease, is a frequent concomitant of the severe forms. Its production is mechanical, and occurs from the forcible compression of the air into the lungs, which is effected by the diaphragm and other expiratory muscles whilst an obstacle exists to the egress of the air.

Atrophy (diminution in bulk) of a part of the lungs is a frequent complication of whooping-cough. It results from closure of one or more divisions of the bronchi, by which the ingress of air to a part of the lung is prevented, and the space left unoccupied is filled up by the undue expansion of the adjoining cells. When the part thus rendered useless is considerable, the gravity of the complication is great. It may be detected by the diminished expansion of the space over the part, and by the absence of respiratory sounds.

Bronchitis and broncho-pheumonia are, however, the most frequent and fatal lung complications of this disease. Deaths from whooping-cough are almost exclusively due to these diseases. In both there are evidences of fever in the varying degrees of heat and dryness of the skin and in the rapid pulse, both during the paroxysm and in the intervals. The cough is more frequent and not always spasmodic, and the dyspnæa (difficulty of breathing) is more permanent.

The brain complications are convulsions and hydrocephalus (a collection of water in the head).

The occurrence of convulsions can not usually be predicted; but if the child be teething or suffering from derangement of the bowels, if during the spasm the thumbs be drawn inward, and during the interval the discoloration of the face continues without lung complication, and if there be a marked degree of exhaustion or oppression following the paroxysm, or the eyes be intolerant of light, convulsions should be anticipated.

Hydrocephalus is so frequently a constitutional affection that the relation of whooping-cough to it is rather that of an excitant of a previous predisposition. The signs are often obscure at first, but in many cases the occurrence of drowsiness, headache and starting during sleep, convulsions, heat of the skin, rapid pulse, intolerance of light and lessened mobility of the pupils, and in others the persistent disposition to vomiting on being moved, will indicate the occurrence of this most important complication.

The complications with infantile remittent fever is most generally found when the latter disease prevails, and when there have been evidences for some weeks of a disordered state of the bowels. The tongue is coated, the breath foul, the evacuations disordered, and the bowels tender on pressure and swelled; the patient does not recover health and strength, but, with or without introductory rigors, slowly exhibits signs of fever. Such cases are protracted in their recovery.

The complication of exhaustion is most generally found

in children of weak constitutions, or in those who have been enfeebled by previous disease. In such, prostration is a marked feature, even during the catarrhal period, but when the spasm has fairly set in it is extreme after every paroxysm. The appetite is inadequate to sustain the system.

TREATMENT.

A greater number of remedies has been prescribed in whooping-cough than in most other diseases—some with a view of "breaking up" or cutting short the disease. The practitioner might as well try to "break up" small-pox or measles as whooping-cough. Many of these articles, in their very nature contrary to each other, have been declared specifics, simply, I suppose, because they have been given in a case of whooping-cough, and the patient, in spite of the remedy and disease, has recovered.

Now, if there was no such thing as a disease "getting well itself," or, in other words, the system recovering, or no such principle as vis medicatrix natura, a recovery after the administration of a certain article would prove much in its favor. But thanks to Him who planned the human system, for placing within it that curative and protective principle, without which I fear, notwithstanding the proud boasts of science, the poor frail system would never recover from any considerable pathological condition. But I fancy the poor child is not so fortunate in all cases; its little stomach is crowded with improper drugs, warring with the disease against the feeble system, whose powers give way, and the poor little bud of promise is carried off. And the parents or friends try to content themselves by philosophically saying that they have tried "every thing they could hear of and all had failed." No wonder they failed; it could not have withstood the drugs let alone the disease. Others leave the whole thing to nature, and for want of a little timely aid the child is lost. But the mortality in the former case is by far the greatest, perhaps five to one.

In the treatment of an uncomplicated case of whooping-cough the chief aim should be to allay the spasm, and thus prevent complications which result from it, and reduce the disease as soon as possible to a common cough. The first object, then, to be attended to is to give the compound powder of rhubarb and potassa—rhubarb two drachms, bicarbonate of potassa one drachm; mix them thoroughly together. The dose of this for a child two years old is one or two grains every two hours until it moves the bowels. (J. King's American Family Physician.) This medicine is finely adapted to this complaint, for while it removes the feecal matter and prevents its accumulation, it also neutralizes the excess of acid secretions in the stomach. The bowels must be very gently moved with this every second day at least, or, in other words, they must be kept regular by its use through the whole course of the disease. The child's diet is a matter of vast importance in this disease. If the stomach is overloaded the cough is worse; if it contains any indigestible or irritating food the disease is greatly aggravated. For an infant the breast milk in small quantities and often is the best food; but if the child does not nurse, the food should be restricted as far as possible to cooked milk, beef tea and meat—such as beef, mutton, game, fowls, fish, &c., but the fat hog meat, pork or bacon must not be used. Eggs, when the yolk has not been cooked hard, is also a good article of diet. But the same precaution must be used as to the quantity as is recommended in the case of the nursing infant, i. e., in small quantities; and often good liberal feeding is

essentially necessary through the whole course of the disease.

The clothing should be arranged to suit the temperature of the atmosphere—dry and warm in cold weather—and the child must not be much exposed, unless the weather is pleasant, in which case the patient should have the benefit of fresh air and exercise.

To allay the spasm, morphine stands deservedly high; the use of it will generally reduce the symptoms to that of a common cough in a few days. But it must be used with much care and attention. The best preparation is to add one grain of the morphine to twelve teaspoonfuls of water and dissolve it. The dose for a child under one year old is about ten drops every four hours; for a child two years old, one fourth of a teaspoonful; for from three to five years old, one half teaspoonful. The effects of the medicine should be closely watched, and if these doses are not sufficient to produce a slight drowsiness on the child they should be carefully increased until that effect is produced. This is a safe, harmless remedy if used with proper caution, and the most efficient known to the medical fraternity. It is recommended on the high authority of Dr. Edward Smith, of London, whose experience in diseases of this class is as great, perhaps, as any other man of the present day.

Emetics may be employed with advantage in those simple cases of whooping-cough in which there is unusual difficulty in removing the "phlegm" or secretion from the bronchi, if it is excessive and impedes respiration. For this purpose the syrup of ipecac may be used, or what is very popular, hive syrup. But with the views which I entertain of the nature and treatment of this disease I do not think that emetics should be the chief remedies employed.

Liniment.—The neck, throat, chest and upper part of the spine should be rubbed once or twice a day with the following liniment: mix together oil of stillingia one ounce, oil of amber one ounce, oil of lobelia one quarter of an ounce, olive oil two ounces. For young children it will be necessary to use more of the olive oil in the preparation or it may irritate the skin too much; this must be watched. And if in giving the solution of morphine too much drowsiness is produced, a few teaspoonfuls of warm, strong coffee will give relief; but of this there can be no danger in giving the amount I have prescribed, and the medicine should not be withheld from the child through any fear of its effects.

It is a curious fact that persons will use patent nostrums freely themselves and on their children with no knowledge whatever of the composition of them, or the compounder either, but will refuse to use an article that the regular profession have tried and tested, and have no hesitancy whatever in recommending. Such, however, is the case. The patent article is shrouded in mystery; we are fond of the mysterious and lay hold of it.

The complicated case of whooping-cough must be treated in view of the complications and according to their nature, the principles of which may be seen in the treatment of the several diseases with which it may be complicated, always keeping in view the principles laid down for the treatment of the simple forms of whooping-cough, and the sustaining principles laid down in this work.

ERYSIPELAS.

This is an acute specific disease, characterized by a peculiar inflammation of the skin and a low type of fever. The inflammation has a great tendency to spread over the surface, to induce serious infiltration and suppuration, and to cause serious exudation between the cutis and the cuticle. The Germans call it die rose der rothlauf, and the English Saint Anthony's fire. The disease may be caused by local irritation of the skin, still there seems to be some cause over and above that, as this cause does not necessarily produce it; for some persons may be at times blistered, burned, cut, torn, or otherwise injured without exhibiting any indications of any such tendency, while others at times will take it from the slightest injury; even a slight prick with a needle has caused the most dangerous cases.

There are some facts which go far to show that this cause, or that some one or more of a number of concurrent causes, may exist in the "individual," for it is well known that some persons are liable to suffer from repeated attacks of erysipelas, either with or without the slightest provocation. Above all it is equally clear that erysipelas often has an epidemic character, and it is still more common to find it haunting certain localites, thus exhibiting the features that are termed "endemic," so that in these cases its most effective cause would seem to be outside of the individual, viz.: in some external circumstance.

If we admit—as, indeed, we must do—the special liability of some individuals or families to the occurrence of this disease, then the conditions underlying such liability must be regarded as "predisposing causes" of erysipelas, and we must seek still further for the socalled "exciting cause" of the affection; this may commonly but not invariably be found in accidental or other injuries to the skin, such as exposure to cold or heat, to moisture, or physical abrasion. If we accept, on the other hand, the presence of a distinct morbific agent, either epidemic or endemic, as the efficient cause of erysipelas, then the constitutional state of the sufferer sinks into comparative unimportance, although we may still retain some belief in its action as a predisponent. The truth as to causation lies, most probably, not between these two ideas, but in their combination; and such conclusion is by no means at variance with the belief that sometimes the one and sometimes the other factor is the more influential. It may be that either one may sometimes be so potent as per se to produce the disease.

In addition to the "exciting causes" already mentioned, viz.: under impressions upon the skin, we must enumerate errors in diet, and especially the taking of certain things, such as shell-fish or improperly smoked, dried, salted or otherwise "half preserved" meats. But by far the most important cause, acting from without, is the "poison," whatever may be its nature, which exists in one case and can be communicated to another, either by inoculation, simple contact, transmission through the air or by fomites.

SYMPTOMS.

Erysipelas is generally ushered in by a marked uneasiness of a not very definite character; rigors, slight shiver-

ing, or only a feeling of chilliness, may mark the onset of the malady. The symptoms are both general and local; on the one hand there is fever, on the other definite structural change in the skin, mucous membrane, and it may be in the sub-cutaneous and sub-mucous tissues. Fever sometimes precedes the redness of the skin, and sometimes the local inflammation is first observed of a bright, shining, red color.

It often happens that the patient feels well in the morning and at mid day, but toward evening is uneasy, passes a restless night, growing worse from hour to hour, and on the morning of the next day observes some redness of his nose or ear; or, feeling better but not well on the second morning, he goes through a day of increasing discomfort, which becomes very considerable toward evening, passes a second night worse than the first, sometimes accompanied by delirium, and the special phenomena of erysipelas appear on the third day. But their appearance may be delayed to even the fourth or fifth day from the onset of the symptoms. There is aching of the limbs, loss of appetite, thirst, nausea or vomiting, diarrhea, soreness of the throat, increased heat of the skin, and in fact all the signs of febrile disturbance. These symptoms are usually, but not always, present.

On the appearance of the cutaneous inflammation there is no remission of these symptoms; on the contrary, they are sometimes augmented in their intensity. The usual site for their development is some part of the head; but they may appear in any other portion of the body. Local disease or injury of the skin, or even of the subcutaneous tissues, may determine the place of commencement. Usually the nose or the ear is the point at which the inflammation may first be seen; it is generally seen to commence in close proximity to one of the pas-

sages through the skin, *i. e.*, where the skin undergoes that transition which consists in its becoming what we term mucous membrane.

To the patient the part affected feels hot and irritable, and upon touching it, sore, stinging and smarting. It is of red color and shining aspect, warmer and harder than the surrounding tissues, swollen, and as the disease advances very tender to the touch. The redness extends from the spot first affected sometimes in all directions, but more commonly in one much more rapidly and widely than in another. It does not spread much on mucous membrane. Sometimes the amount of swelling is inconsiderable, at other times it is enormous, and the disfigurement is such that no one would recognize the features of the sufferer, nor for a moment think that they were features at all, or even parts of any human being. Such was the case in an attack the writer experienced in person about twenty-two years ago. It was in the face, and extended up the cheek and around one eye and one side The appearance was hideous and really of the nose. frightful. Well do I recollect the appearance of some timid friends when they saw me; and well, too, do I recollect the agony I was in. The case was a severe one, and lasted for weeks. I only owe my recovery to a vigorous and powerful constitution. At that time so little was known about the treatment of this terrible disease that the physician—a good one, and a kind hearted man, to whom I shall ever feel grateful—Dr. Elijah McLean, of Washington, Mo., allowed nature to have her own course, and the great principle to which I have so often referred in this work, vis natura medicatrix, triumphed, and I was healed.

About this time the disease prevailed to an alarming extent, both as an epidemic and as an endemic, for it was,

particularly in Franklin county, Mo., mostly confined to the town of Union, the county seat. The "antiphlogistic regimen" was actively tried, and the disease was fearfully fatal. Eighty per cent. at least of the cases proved fatal. Again I feel inclined to thank the Doctor for his kindness in only giving me a little palliative treatment, and allowing my system at least to have a fair chance.

TREATMENT.

Dr. J. Russell Reynolds, in his excellent work, entitled "A System of Medicine," prefaces his remarks on the treatment of erysipelas with the following: "As I believe that the class of cases which have been described in such manner as to justify the use of antiphlogistic treatment do not exist except in the histories of the past and the imaginations of the present, it appears to me unnecessary to say how much blood should be taken from the arm of a man; provided, that he is found in a condition that we never met with." As to the treatment he says, further, "The general medical treatment of erysipelas resembles rather that of the advnamic (low). fevers than that of inflammations, even supposing that the latter should present occasionally what is called 'sthenic' form." Almost all the cases—so far as my own experience reaches—all that come under the care of the physician from the first, not only bear well, but are positively benefitted by the supporting and tonic treatment. The kind and degree of such treatment must be determined by, and proportionate to, the severity of the symptoms which have been already described. In some cases stimulants are required from the first, the conditions which necessitate their employment being identical with those which are common to that large group of diseases in which erysipelas finds its place.

When stimulants are not required at the onset, little or nothing is gained by such use of salines, or any other general treatment which shall do more than maintain a normal amount of the secretions. Thus, in very mild cases, in persons of average health, one or two doses of the simplest saline aperient may be all that is requisite. When the disease is more severe, and exhibits a tendency to spread after the balance of secretion has been restored, the patient at the same time becoming restless and exhausted, the most efficient general treatment consists in the administration of bark, with ammonia, during the day, and an efficient but not heroic opiate at night. Should the adynamic symptoms increase, large quantities of alcoholic stimulants are required, at short intervals; and the amount that may be taken with advantage is as large as that which has been found useful in any of the specific fevers.

The tincture of sesquichloride of iron of the London Pharmacopæia is by far the most useful medicine that I know of in the treatment of this disease. So marked is its action that it has been thought by some to exert a "specific" influence in erysipelas; but without asserting that it possesses such power, in the strict sense of the word "specific," it may be well to mention that its utility appears equally great in diphtheria, and, perhaps, still greater in cases of diphtheroid sore throat. The essential condition of its success is its administration in large and quickly repeated doses. It has often happened that disappointment has arisen in the use of the tincture of iron, but in most of these instances the tincture has been given in doses of ten or fifteen minims three times daily; such doses are certainly useless. But when the tincture is given in doses of forty minims (drops), or even more, every four hours, the results have usually been most favorable. The most convenient form for its administration is a mixture containing in each dose forty minims of the tincture with an equal quantity of chloric ether and glycerine, diluted with an ounce and a half of water. The effects of this medicine may be seen sometimes after the first, often after the second, dose: the local inflammation ceases to extend; the inflamed part becomes paler, less tender, less swollen; the feeling of exhaustion is diminished, and with it such symptoms of exhaustion as exaggerated frequency of pulse and dry brown tongue; the temperature falls, and sleep frequently ensues. As soon as such changes take place the quantity of the tincture may be reduced. It is not, however, safe to trust to this medicine alone; alcoholic stimulants are often required at the same time.

In the *local* treatment of erysipelas two things are to be strenuously avoided—the exposure of the skin to variations of temperature, and the other any thing that shall interrupt its natural function. Among the former are included exposure to drafts and to the chilling effects of wet applications; among the latter the covering of the skin with any oily matters, ointments, &c. It has occurred to me frequently to see erysipelas spreading rapidly under the use of "cooling lotions," and to see it arrested by their discontinuance, and the application of simple dry flour, violet powder, or oxyde of zinc.

The spread of the inflammation can often be prevented by the application of nitrate of silver—marking a line around the edge with a strong solution of it with a camel's hair pencil. This should always be attempted; too much importance, however, must not be attached to it and other treatment neglected.

The danger or "road to death" in erysipelas lies in three directions: first, by exhaustion; second, by implication of the brain; third, by obstruction of respiration. The first is guarded by sustaining the system with stimulants and nutrients; the second, when it occurs, or when the brain or membrane is affected, by ice to the head and warm foot baths; the third, when the fauces or glottis is so swollen as to threaten life, laryngotomy or tracheotomy must be performed.

When pus is known to exist, even in small quantities, in the neighborhood of an important organ, such as the eye or glottis, an incision must be made for its evacuation. When it exists in larger quantities, under the skin of limbs or about joints or glands, the same plan should be adopted; free incisions are necessary.

Good feeding, fresh air and quiet are necessary in the treatment of erysipelas.

Some cases are so mild as scarcely to require any treatment, but the disease may generally be reckoned among the troublesome and dangerous, particularly if treated on the lowering system.

Diseases of the Circulatory System.

There are several valuable rules that the researches of able men have established for guidance in disease of the

HEART.

- 1. "In health the cardiac dullness, on percussion, measures, immediately below the nipple, two inches across, and the extent of the dullness beyond this measurement commonly indicates either the increased size of the organ or undue distension of the pericardium."
- 2. In health the apex of the heart may be felt and seen to strike the chest between the fifth and sixth ribs, immediately below and a little to the inside of the left nipple. Any variations that may exist in the position of the apex are indications of disease, either of the heart itself or of the parts around it.
- 3. A friction murmur, synchronous with the heart's movements, indicates pericardial or exo-pericardial exudation.
- 4. A bellows murmur with the first sound, heard loudest over the apex, indicates mitral insufficiency.
- 5. A bellows murmur with the second sound, heard loudest at the base, indicates aortic insufficiency.
- 6. A murmur with the second sound, loudest at the apex, is very rare; but when present it indicates—first, aortic disease, the murmur being propagated downward to the apex; or, second, roughened auracular surface of

the mitral valves; or, third, mitral obstruction, which is almost always associated with insufficiency when the murmur is double or occupies the period of both cardia sounds.

- 7. A murmur with the first sound, loudest at the base and propagated in the direction of the large arteries, is more common. It may depend—first, on an altered condition of the blood, as in anemia; or, second, on dilatation or disease of the aorta itself; or, third, on stricture of the aortic orifice or disease of the aortic valves, in which case there is almost always insufficiency also, and then the murmur is double, or occupies the period of both sounds.
- 8. Hypertrophy of the heart may exist independent of valvular disease, but this is very rare. In the vast majority of cases it is the left ventricle which is affected, and in connection with mitral or aortic disease. In the former case the hypertrophy is uniform, with rounding of the apex; in the latter there is dilated hypertrophy, with elongation of the apex.

Attention to these rules alone will, in a great majority of cases, enable you to arrive with precision at the nature of the lesion present. In cases in which there may be any doubt you will derive further assistance from our observation of the concomitant symptoms, such as—first, the nature of the pulse at the wrist; second, the nature of the pulmonary or cerebral derangement. Thus, as a general rule, but one on which you must not place too much confidence, the pulse is soft or irregular in mitral disease, but hard, jerking or irregular in aortic disease. Again, it has been observed that cerebral symptoms are more common and urgent in aortic disease, and pulmonary symptoms more common and urgent in mitral disease.

I have purposely said nothing now of the disease of

the right side of the heart, and of a few other rare disordered conditions of the organ, because I am convinced that an appreciation of the rules above given is the best method of enabling you to comprehend and easily detect any exceptional cases which may arise.

To recapitulate: You have to determine—first, by percussion, whether the heart be of its normal size or not; second, whether an abnormal murmur does or does not exist; third, if it be present, whether it accompanies the first or second sound of the heart; and, fourth, in what place and in what direction the murmur is heard loudest. These points ascertained, the conclusion follows from the rules previously given.

Nothing but percussing the cardia with your own hands and carefully listening to the sounds with your own ears can be of the slightest service in making a correct diagnosis in heart disease. By carefully observing and studying the above rules any one with ordinary judgment can asertain the true condition of the diseases of the heart, and I shall give no further symptoms.

VALVULAR AND ORGANIC DISEASES OF THE HEART.

The lesions producing valvular diseases of the heart are various, and may be referred to mechanical violence, to the effects of exudation, acute or chronic, to depositions of fibrin, and to the different forms of degeneration of texture. But, however occasioned, they all tend to produce subsequent changes in the texture and vital actions of the heart itself, and above all, hypertrophy and fatty degenerations of its muscular walls, with increased, diminished, or irregular contractions of its cavities. It is with these latter that the physician has principally to

do, although a knowledge of the former is essential to a correct appreciation and proper treatment of every individual case.

Mechanical injuries not unfrequently occasion sudden disease or rupture of the valves, separating their attachments and causing subsequent adhesions and fibrinous depositions. Great muscular exertion has also occasioned similar results.

Exudations into or on the surface of the valves, constituting the endo-carditis of systematic writers, is a common cause of valvular disease.

Deposition of fibrin from the blood may occur on the valves in consequence of laceration or of exudation, but sometimes, as far as can be ascertained, without organic lesion. When the blood abounds with fibrin, as especially occurs in acute rheumatism, such deposits may take place on the valves themselves without any previous lesion of them, an occurrence which would seem to explain the relation between rheumatic and cardiac disorders.

Degeneration of the valves may occur in various ways, and in its nature be albuminous, fatty, or mineral. Thus the thickening and indurations owing to chronic exudation may assume a density equal to ligament or fibrocartilage; or, on the other hand, they may soften, undergo fatty degeneration, and at length ulcerate, forming one or more perforations through the membranous portion of the valve.

The immediate result of all these different lesions is, that the valves being incompetent and not closing perfectly, the blood regurgitates back into the ventricles or auricles at each systole or diastole, according to the valve affected, or, if there be contractions and obstructions at the orifice, it is propelled forward with difficulty. In either case increased muscular effort is required to

carry on the circulation, and the result is the greater or less enlargement of the heart, or hypertrophy.

Hypertrophy of the heart may arise from several causes, but by far the most common is disease in one or more of its valves. In this case it follows the certain law of increased growth: parts subjected to unusual exertion or increase of function, as the blacksmith's arm or the muscles on the leg of the "pretty danseuse," increase in bulk.

Fatty degenerations of the heart. The heart may be loaded, and even more or less infiltrated, with adipose tissue, producing one form of fatty degeneration. By far the most important form, however, is the lesion. There can be no doubt that the fibro-albuminous substance constituting flesh is capable of undergoing a transformation into fat. Of the exact chemical nature of that transformation we know but little; it may not only be observed in the dead body, but may be produced artificially by exposing muscle to a running stream of water, whereby it is changed into adipocere. It may occur as a sequela of every form of cardiac disease, but especially when the aortic valves are affected, as well as from a modification in the general condition of the system leading to fatty degeneration of a number of other organs.

Myocarditis, or true inflammation of the substance of the heart, is one of the rarest organic diseases known.

TREATMENT OF VALVULAR AND ORGANIC DISEASES OF THE HEART.

That the various lesions of the valves are susceptible of being removed by medicines is one of those fallacies the advance of science has expelled. All that the practitioner can hope to accomplish is to modify, and if possible check, those resulting phenomena from which real

danger is to be apprehended. The notion is very general that simply because the pulse is strong it is the mission of the practitioner to make it weak; that because the heart acts violently it ought to be made to beat quietly by lowering the system.

We have seen that valvular disease leads to dilated hypertrophy; this is accompanied by excessive action, and a strong, jerking, hard pulse. But the strong pulse and enlarged ventricle in the one case is a wise provision of nature, set up to counterbalance the otherwise fatal consequences of the valvular obstruction; it is that "marvelous power whereby it protects itself against disease." And the violent action of the heart in the other is a proof of weakness rather than of strength, and instead of being lessened by bleeding and antiphlogistics, requires for its removal tonics, nutrients and calmatives.

What, then, we have principally to attend to in valvular disease of the heart is, to do all in our power to support the normal strength of the economy and avoid agitating the patient, instead of lowering the pulse or giving mercury, under the idea that thereby we are putting down an inflammation or causing absorption of the exudation. Pain, agina and paroxysmal attacks may be relieved by the cautious use of morphine or digitalis, used as palliatives. The grand and prominent feature to be remembered is to build up and sustain the system; use a good, nutritious diet; avoid tea, coffee and tobacco; use such tonics as tincture of Peruvian bark or quinine; keep the bowels in a healthy, soluble condition, or at least have one operation every day; avoid all kinds of excitement and take exercise in the open air.

FUNCTIONAL DISORDERS OF THE HEART.

What are called functional disorders of the heart are in fact, only symptoms of obscure organic diseases—o

indigestion, or of weakness of the general system from alteration of the blood, or other cause. They assume three principal forms: First, angina pectoris, or spasm of the muscular walls of the heart, causing excruciating pain and a feeling of sinking difficult to describe. It is generally induced by exertion. It may accompany organic disease of the organ, and it has been frequently observed in connection with fatty heart and calcareous degeneration of the coronary valve. Second, in chlorosis and the anæmia of young women; these are palpitations with a tendency to syncope, accompanied by a blowing murmur at the base. The cause of this is very obscure; is said by some to be arterial and by others venous. Similar palpitations, often with a small heart, occur in young men who follow sedentary pursuits, especially students of the learned professions. Their appetite is generally defective, the body weak and indisposed to exertion, the mind and nervous system irritable, and the sleep prevented by the excessive action of an uneasy sensation attributed to the heart

TREATMENT.

The treatment in all of these cases is, when it is dependent on weakness, to increase the vigor of the constitution by nutrients, proper exercise and the administration of iron. In chlorosis, more especially, the different preparations of iron are beneficial. In young men, regulated exercise, suspension from study, attention to diet, and especially removing the attention from the heart at night by cheerful conversation or interesting light reading, are the most useful means of removing the disorder. In all cases the concomitant derangements must be studied and, if possible, removed, such as amenorrhea, hemorrhoids, spermatorrhea, dyspepsia, &c.

CONGESTION OF THE BRAIN.

1, APOPLECTIC FORM; 2, CONVULSIVE FORM; 3, DELIRIUM; AND, 4, FEBRILE FORM.

Under the name congestion of the brain I have included four forms somewhat different in their character. In one of these forms the case is described as an "apoplectic" or a paralytic stroke, in another a seizure of "convulsions," in a third "delirium," and in the fourth as a feverish attack or "brain fever." Patients taken with symptoms of disturbance in any of these forms often die; and, upon post mortem examination, there may be but one departure from healthy appearance of the brain, viz.: congestion.

It will be convenient to describe first the premonitory symptoms of cerebral congestion, viz.: those which are or may be common to its several forms; then to detail, under four distinct heads, the developed symptoms, with their modes of termination in recovery; and, lastly, to describe again generally those which are fatal and into which any one of the four varieties may pass by a rapid or gradual progress.

SYMPTOMS—A PREMONITORY.

"There is often a mixture of two classes of symptoms," says Dr. Reynolds: "those which indicate over action and the reverse; sometimes the two exist, at other times

they alternate; in one case the former group is predominant, in another the latter; whereas in a few all the symptoms tell in a direction either of inaction or undue excitement. It is possible sometimes to foretell from the nature of those symptoms the form which it is most likely that the disease will hereafter assume, but such forecast is uncertain in all cases, and useful in only a very small proportion.

"The mind is changed in such manner that there is diminished intellectual power; thought becomes confused and memory treacherous; the individual may be irritable, worried, fanciful, peevish or depressed; sleepy, and especially so after meals; at times indifferent and sluggish; he complains that he 'can not think,' and the forced effort to do so makes him worse; he talks at random, using wrong words, sometimes noticing his blunders, correcting them and expressing his annoyance; sometimes not observing that he was wrong and being greatly annoved at any one who should attempt to set him right. He is usually worse after being in a recumbent position or posture, and often sleeps; his sleep is heavy and disturbed by dreams and nightmare; sometimes there is transient delirium; one person is mistaken for another; the past and the present are curiously intermixed and the conversation is like that of a dream, which goes on while the patient is awake, but from which he may be awakened still further by a loud voice or any other strong appeal to the senses."

The senses are dull, hearing is defective, and there are "rumbling noises in the head;" the sight is dim, and "black specks" appear before the eyes; sometimes diplopia (double sightedness, when two objects are seen at once—you look at the moon you see two moons) is present; there is giddiness, and a feeling of fullness and

oppression in the head, with "stupid headache"—made worse by lying down. There is rarely pain in the head, but, as the patient says, a "confused, uncomfortable feeling." The limbs feel heavy, and there is often numbness, or "pins and needles" in the toes and fingers. These sensations come and go, but between the period of their recurrence there is a sense of general discomfort, which it is often quite impossible for the patient to describe. Often it is that of "oppression about the breathing;" and great difficulty from this source is experienced in walking up stairs, or up hill, or even a little more quickly than usual on level ground. Sometimes "feelings of faintness" are complained of, and with them nausea and increased vertigo.

The power of movement is diminished, and with it, more notably, the readiness of action. The limbs are dragged along sleepily or sluggishly; the step loses its elasticity, is shorter than in health; the general bearing is changed; and sometimes, but rarely, alterations in power and activity are observed on one side of the body more particularly than on the other. The patient simply leans forward, and appears weak and lethargic; or he may lean on one side, hold one shoulder half an inch or an inch higher than the other when standing, and when sitting collapse, as it were, on the lower side.

There are other symptoms than those of direct change in the nervous functions, such as redness, and often dusky redness of the lips, eyes, face and scalp. The head is hotter than the cheeks, the jugular veins are distended, and the neck appears thick. On stooping the veins of the forehead are too full, and the beat of the carotids is too distinct. The pulse is slow and labored, or quick and feeble; the tongue is foul; the urine small in quantity; the bowels are confined, and the extremities

cold. The heart may be found dilated, and there may be tricuspid regurgitation, shown by the pulsation of the jugulars, and systolic murmur at the ensiform cartilage. (See article on vascular system.)

These premonitory symptoms may exist for variable periods of time, may appear and disappear, or may gradually increase and pass into one or another form of malady already hinted at, but now to be described.

DEVELOPED SYMPTOMS-1, APOPLECTIC FORM.

The attack usually takes place during some muscular exertion, such as lifting a heavy weight, blowing the nose, coughing, sneezing, straining at stool, or stooping to pick up something. Sometimes it can not be traced to any one of them, but it rarely occurs during sleep; patients do not wake up and find themselves in a state of what is called "congestive apoplexy." They are more commonly doing their ordinary work, or trying to do a little more than they are able to accomplish, when the attack is made. Consciousness, sensation and power of motion seem to be lost, and the patient is said to have an "apoplectic fit;" but these faculties are not altogether lost, or if they are, it is for a few moments only.

The mind is not in complete abeyance. There are indications that the patient knows, though but imperfectly, what is said to him; he makes some attempts to respond to questions, and to do what he is asked to do. He starts at a loud and sudden noise, looks around him, and gives signs of annoyance when he is disturbed. If at the moment of seizure he should appear to be in profound coma, this coma is of short, almost momentary, duration, and soon there are signs of returning consciousness; there is confusion of thought, bewilderment, and dullness of

apprehension, passing sometimes into a mild delirium, but more often into a heavy sleep.

The senses, obtuse for a moment, are rapidly restored to a certain point. The patient shrinks from strong light, groans when pinched, starts when spoken to, but yet takes little or no notice of ordinary impressions. The power of motion is so diminished that the patient falls down, and the limbs when raised fall heavily. There is no stertor in the breathing. The speech is clumsy, the words are clipped, and wrong words are used; but this is for a short time only.

The *pulse* at the moment of attack is sometimes suspended at the wrist, and the breathing is arrested; but soon the pulse is felt to be heavy and labored, and the respiration becomes tumultuous; and again in a few seconds both go on as they did before. The vascular fullness is greatly increased.

The symptoms of a first attack generally abate in an hour or less; sometimes they last much longer. Upon each succeeding attack the symptoms last longer generally; fresh attacks supervene, each one leaving the patient lower and lower.

The apoplectic form of cerebral congestion is most common in advanced life.

THE CONVULSIVE FORM.

The paroxysms that occur have the general features of epilepsy, but they differ from the attacks of that disease in their general history and mode of onset.

Congestive convulsions may occur at any period of life, but they are most frequently met with at the time of full maturity, or when that stage is past. These are usually the premonitory signs of congestion, but they may be very slight. The patient may be seized during sleep, or while making some unaccustomed effort.

Much discomfort precedes an attack for a few seconds, minutes, or it may be hours. A tight cravat worn while making some undue exertion, a sudden alarm, or an indigestible meal rapidly swallowed, may be the immediate antecedent. The patient, more or less suddenly, becomes confused, then apparently half unconscious, makes some unintelligible sounds, turns red and then blue in the face, staggers for support, looks round him wildly or imploringly, and then sits down or falls down convulsed, and a paroxysm of an epileptic character supervenes. From this he recovers partially, exhibiting great confusion of mind, headache, muscular feebleness, and sometimes partial paralysis of one side.

The attack is sometimes followed by quasi-maniacal excitement, lasting from half to three or four hours, after which the patient becomes exhausted, and falls into a heavy sleep.

From this state he may recover, or during sleep a second or third attack of convulsions may come on.

THE DELIRIUM FORM.

Delirium may be the most marked symptom of congestion of the brain in certain cases. The attack may come on suddenly, may be induced by a fall or fright; but when occurring spontaneously is first observed toward evening. Sometimes the attack is preceded by "depression of spirits;" the patient after some hours, or even days of taciturnity, becomes cheerful or gay and hilarious; he talks loudly and incoherently, but rarely exhibits any violence. He gets out of bed, wanders about his room, opens drawers, puts on his dress, and is bent upon doing something he can not explain, or which,

if expressed in words, is unnecessary and absurd. He is under a delusion of no fixed character; and can usually be directed and managed without much difficulty.

The patient may complain of pain in the head, or an uneasy sensation in the limbs; and there may be twitching of the muscles, or weakness of the extremities.

Durand Fardel states that it is common to find a mucous secretion, clear and viscid, produced on the eyelids, or in the interior of the mouth, and sometimes running over the whole face.

THE FEBRILE FORM.

In the earlier periods of life, and especially in infancy and childhood, congestion of the brain may occur with marked elevation of temperature, dry skin, restlessness and thirst. The head is unduly hot, the cheeks and conjunctiva are flushed, while the extremities are cold; the mental faculties are obscured, and the sleep is broken by dreams or transient and mild delirium. Usually there has been some distinct cause for such disturbances: there is no marked prostration, no initial rigor. The patient usually recovers speedily. Recovery is, however, not always observed, the distress may persist, there may be, alternately, convulsions and delirium, or there may be the changes from over excitement to drowsiness—the latter gradually becoming relatively more marked, until the patient passes into a state of stupor from which he may never rally.

Finally, under whatever form congestion of the brain may occur primarily, its tendency, unless speedily recovered from, is to produce a condition of torpor and inactivity. The mind becomes a blank; there is sometimes profound coma, stertorous breathing, and involuntary evacuations of both the bladder and rectum; sensi-

bility, both general and special, is lost, and voluntary muscular power reduced to a minimum. Convulsions may occasionally disturb the calm, or there may be fitful and momentary muttering of unintelligible sounds, but usually, in this latter stage, the patient lies quietly, with labored pulse and breathing, and with flickering contractions of the muscles of the limbs until he dies.

TREATMENT.

Bleeding has heretofore been universally recommended for congestion of the brain, but as there are two distinct classes of patients, one plethoric, and the other low, the pulse small, feeble and irregular, I do not know how the treatment is to be reconciled, even with common sense. Late writers, more conservative, only recommend blood letting in the case of the plethoric. Dr. Reynolds, in his excellent "System of Medicine," so wedded has he been to the popular theory that he, with all his good sense and knowledge of the true principles of practice, goes on to recommend bleeding, to the extent of eight or ten ounces, in the plethoric form. But, as if awakened to common sense by the utterance of such pernicious language, he says, "No man at the present day would think of bleeding from the arm." But he spoils this sensible language by continuing and recommending leeches and cupping to the back of the neck to the extent of three or four ounces.

For the proper treatment of congestion of the brain it is proper to raise the head, to apply cold water or ice to the forehead, and to place the feet and hands in hot baths. If the stomach be overloaded, an emetic of a tablespoonful of mustard in half a pint or less of warm water, or of twenty grains of ipecac in warm water, should be given—one fourth of a pint may be given at

once—and often with the discharge from the stomach the symptoms pass away. This is especially useful when the attack has followed a full but hastily taken meal. It is of great importance to empty the rectum, and the most efficient way of doing this is by an injection of warm water.

When the tendency to cerebral congestion is noticed, rather than any marked symptoms of its presence to a high degree, the secretions must be carefully regulated, and among them one of the most important is the urinary. Many cases of threatening aspect are to be relieved by saline diuretics; and "I have known a copious flow," says Dr. Reynolds, "of urine to be followed by the removal of symptoms which had existed in spite of free purgation and other treatment." There are many cases occurring in advanced life in which the congestion is of only momentary duration, after which the patient is bewildered and pale, his skin cool and moist, and his pulse feeble. Under such circumstances the cautious administration of alcohol is called for, and of this wine is most useful.

It is well, however, to give carbonate of potash or soda, as there is always considerable acidity of the stomach; and the discharge of flatus by the mouth, which results from such administration, is often followed by a complete remission of the symptoms.

As precautionary measures, quiet of the mind and gentle exercise of body, with the careful avoidance of either fatigue, sudden change of posture or strain, should be enjoined; and much relief may be obtained by insuring a position during sleep which shall prevent not only the head, but the head and shoulders from sinking down to the level of the body. This may be obtained by a simple contrivance placed under the bed or mattress

upon which the patient lies, such an arrangement being much better than a mass of pillows, which shift their places and often maintain the head in a condition of undue heat.

The word apoplexy has been used in two different senses. By some authors it has been employed to denote a group of symptoms, such as we have given above under the head of "congestion;" but for these symptoms we find congestion the better word, as it describes a condition—an anatomical condition. Other authors have applied the term apoplexy to an anatomical condition—cerebral hemorrhage. The term does not describe the condition, hence we will dispense with the use of it altogether, and use cerebral hemorrhage as a name altogether more suitable. The fact is, apoplexy has been and is applied to entirely too wide a range of diseases; its range is almost as wide as the term "nervous" or "hysteria." Anything that seems to "surprise the brain" (as a lexicographer says in his definition of apoplexy) and produce insensibility is termed apoplexy. It matters not whether it is an effusion of blood, or a pressure upon the brain by congestion of blood vessels, a drunk, sunstroke, poisoned by opiun (using it, as is the custom now, for the wicked purpose of intoxication), from uramia, or the patient may be suffering from an abscess in the brain, or a condition of the nerves called "nervous apoplexy," or he may have received some injury on the head from a blow or fall; or he may have a clot of blood in the poris varolii, or an epileptic fit, or a rupture of a cerebral aneurism. Any of these things produce "surprise of the brain," but it seems great folly to call them all by one name.

SUNSTROKE—INSOLATION.

A disease of the nervous system, excited by heat, sometimes following exposure to the direct rays of the sun, particularly when to heat is added the pressure of tight and unsuitable clothing; more frequently occurring when the above conditions are combined with exhaustion.

The history of this disease shows us that it has been known and recognized as a dangerous disease from early times. Fatal examples of it are recorded by the sacred writers, which have been referred to by most modern authors who have written on the subject. It is worthy of note that one of the blessings promised to those who shall be partakers of the better life that is to come is, that "the sun shall not light upon them nor any heat"—a promise full of meaning to the inhabitants of the dry and thirsty land to whom it was first made.

SYMPTOMS.

Sunstroke or *insolation* has been divided by Dr. Morehead into three varieties—the cardiac, the cerebro-spinal, and the mixed. In the present state of knowledge this classification is useful, and it certainly is founded on correct pathology.

In the cardiac variety the patient falls, gasps, and in some severe cases expires before there is time to do much for his recovery, death taking place by syncope.

In the so-called cerebro-spinal cases premonitory symptoms generally give notice of the coming danger; these are extreme heat, dryness of skin, the skin stinging, giddiness, congestion of the eyes, extreme debility, nausea, and a frequent desire to micturate.

The symptoms in the *mixed* form partake of both varieties, and death is brought about partly by syncope and partly by coma.

TREATMENT.

Dr. W. C. Maclean remarks that "in the days when insolation was commonly mistaken for cerebral apoplexy the lancet was usually the first resource. The mortality even now, under a mode of treatment more in accordance with sound pathology, is often exceedingly high; but when blood letting was the the rule recovery was the rare exception." The Dr. proceeds to give several cases where bleeding was resorted to and the cases proved fatal, one at least of which would have evidently recovered had he been let alone; but the crimson fluid of life was ruthlessly taken from him and death claimed him as a prize for the violation of the laws of life and health.

At the earliest possible moment let the sufferer be carried to the nearest shade, stripped and assiduously douched with cold water over head, neck and chest. If this be effectually and quickly done, the powerful impression on the cutaneous nerves will soon re-establish respiration, at first by gasps and catches, soon in a more regular and tranquil manner. It will also reduce the heat of the skin. It may require to be done again and again.

The patient should be encouraged to drink water freely, and if vomiting follows, this will often aid in relieving the congestion of the lungs. When the skin is cold and clammy and the respiration sighing, we must limit the use of the *douche* to the face and chest. When the heat of the skin is excessive we may use ice and give an injection of ice water. If sensibility be not restored and maintained by the *douche*, a blister may be applied to the back of the neck. We should also apply ammonia, "hartshorn," with the usual caution, to the nostrils.

Chloroform is now being recommended by Dr. Maclean to be inhaled. He gets the suggestion from Dr. Barclay

These are both eminent physicians, and of course excellent authority. Dr. Maclean says, after speaking of having saved a number of lives in India by its use: "Dr. Barclay, in like manner, found chloroform inhalations useful in the convulsive form of the disease attended with extreme nervous irritability, a class of cases in which he adds the *douche* is inadmissible from the agony it occasions. In some instances life was saved by this remedy." It must not be forgotten that the patient must be well sustained, and a judicious use of stimulants must not be neglected.

Persistent headache is one of the most common sequels to sunstroke. For this the use of the iodide of potassium is recommended; but it is said that this troublesome sequel is seldom, if ever, gotten rid of without a journey to a colder climate.

INFLAMMATION OF THE BRAIN.

CEREBRITIS.

It is scarcely possible for us to tell inflammation of the brain—cerebritis—from inflammation of the membrane around the brain—meningitis. Fortunately, however, it is of very little, if any, practical importance, as the two affections are almost always combined; and if they were not, if judicious treatment be given for one, it will not be far out of the way for the other.

Inflammation of the brain is a morbid process which gives rise to more or less complicated phenomena during life, while after death traces of its powers are to be detected.

SYMPTOMS.

The chief and most common early indications of encephalitis, or acute inflammation of the brain and its membranes are, fever, nausea and vomiting, acute headache, frequent and irregular pulse, bowels generally constipated, impatience of light and sound, watchfulness, a look of oppression, suffusion of the eyes, confusion of thought, and even delirium.

At the end of from twelve hours to two days, the second stage of the complaint sets in—the period of collapse. The patient falls into a state of stupor; his articulation gets difficult or indistinct; his vision and hearing become dull; the pupil, from having been contracted to

a pin's point, becomes dilated; there may be squinting and paralysis of the muscles of the eyelids; there are frequent twitchings of the muscles; the countenance is ghastly; sordes form on the gums and teeth; the body is covered with cold sweats; the sphincters relax; and there is a few convulsive paroxysms, paralysis and profound coma, which usually soon end in death. Occasionally the first symptom that attracts attention is a sudden attack of convulsion, in some cases occurring without any previous illness, sometimes preceded for a few days by headache and slight complaints which have passed unnoticed. The convulsion is generally long and severe; it may be followed immediately by coma, which in a few days is fatal, or it may recur frequently at short intervals and pass into coma at the end of twenty-four hours. Dr. Watson thinks that when nausea and vomiting are the earliest symptoms the inflammation has had its origin in the cerebral pulp—the substance of the brain; and that when the attack commences with a convulsion, the inflammation has commenced in the pia mater or the arachnoid." The convulsions are thus caused by centric action. The disease may terminate fatally in a few hours or it many continue and the patient struggle on for weeks. Fortunately the disease is of rare occurrence. Plethoric persons and those who have short necks are said to be more subject to it; this, I think, is extremely doubtful, so much so, in my mind, that I would place no reliance upon it whatever; it is like a thousand other things that have been assumed in the medical science.

TREATMENT.

Inflammation of the brain is a disease that most quickly depresses the human body, and of that very depression the patient dies. Then I ask, in the name of common sense,

shall we give aid to the destroyer by lowering the vital forces of the system? The antiphlogistic regimen has been almost the universal practice; patient after patient have been subjected to it, only to die. Dr. Abercrombie, in speaking of the results of such a course of remedies, says: "The cases which thus terminate favorably form, it must be confessed, but a small proportion of those which come under the view of a physician of considerable practice; but they hold out every encouragement to persevere in the treatment of a class of diseases which, after a certain period of their progress, we are too apt to consider as hopeless." Dr. Tanner says, after making the above quotation from Dr. Abercrombie: "With the greatest respect for this excellent physician's opinions, it still seems to me that the extensive failure of one plan of treatment should merely lead us to try another; and more especially, perhaps, to see if nature, unaided or only gently guided, will not convey the patient through a disease where the efforts of art are notoriously so futile. Be this as it may, let us determine not to thwart nature, as we may easily do by acting upon the fallacious notion that the free loss of blood is well borne; neither let us credit those who assert that antimony is capable of effecting a cure in these cases. On the contrary, we shall do much more good if we will be content to prescribe for the urgent symptoms as they arise, to calm excitement by sedatives, to lessen increased heat of body by diluents and tepid sponging, to prevent accumulations in the intestines by purgatives and to diminish maniacal delirium by the application of cold to the head." Thus we have the correct plan before us, as far as he has gone; but the system must, when depressed, be sustained.

But to particularize for general principles is not enough to lay down in a family practice, for it is not supposed that every one will understand how to fulfill all these indications, nor can be afford to investigate and do the thinking, so we undertake to do the thinking for him: Commence by giving ten grains of calomel and ten grains of jalap, followed in four hours by some of the salines in ordinary doses every two hours, until an action is had freely on the bowels. It is often a very difficult matter to get any action of the bowels, and for this reason I would recommend another cathartic, more efficient and entirely free from danger: oil of croton four drops, sugar two drachms, mucilage of gum arabic one ounce. Of this preparation give a teaspoonful every fifteen or twenty minutes until an action is had on the bowels. Ice water should be allowed freely. The hair must be cut short and cold lotions or ice applied to the head; pounded ice in a bladder applied to the head is an excellent thing, and should not be neglected. At the same time it must be remembered that cold will powerfully depress, hence there must be some discretion used in the use of it. If ice can not be had, a small stream of cold water may be poured upon the crown of the head for several minutes at a time, then discontinued for a few minutes, and again applied, using proper caution not to depress the patient.

While the cold is being applied to the head the feet should be, if possible, immersed in warm water; if this can not well be done on account of the intractability of the patient, bottles or jugs containing hot water should be placed to his feet.

His body, during the violent febrile excitement, should be sponged with tepid water. Iodide of potassium is said to directly modify the morbid action; it should be given in three grain doses every four or six hours, dissolved in two tablespoonfuls of water. I now come to speak of an article that many medical men forbid the use of in this disease; I refer to opium. It is claimed, and correctly too, that opium exerts a particular influence on the brain. The objectors to its use claim that this influence is exerted by producing a stagnation, or at least a sluggishness, in the circulation, allowing the blood to accumulate about the brain, and consequently oppressing that organ, which oppression deadens the nervous sensibility, producing the narcotic and sedative effect. Now, granting all that, if you please, still you have no valid objection to the use of the article. It is not claimed that opium relaxes the blood vessels and makes a greater capacity for blood, but, on the other hand, it rather contracts them. What is the condition of the blood vessels about the brain? It is simply this: they are already filled to their utmost capacity. Thus opium can not cause any further accumulation, and the inactivity and bluntness of the nerves is just what we want. Everything about an inflamed organ must be kept just as still and quiet as possible, so that it may be allowed to rest as it were, and gain strength at every opportunity. Hence it is good practice in inflammation of the brain, or in any other inflammation, to keep the patient, to a greater or less extent, under the influence of opium or morphine. For this purpose opium in one grain doses, or morphine in one-fourth grain doses, should be used often enough to make a decided impression.

As soon as the system exhibits signs of depression stimulants must be given. For this purpose Norton's Virginia Seedling wine and beef tea, or good port wine and beef tea, should be freely used; sometimes brandy toddy will have to be used freely.

Great care will be necessary during convalescence. Patients recovering from this disease are very easy to relapse, and a relapse would scarcely be recovered from. In fact the disease must be watched very closely from its very inception to its close, and managed very carefully. It is a fearful malady, and one that, under the old form of treatment, has proved very disastrous.

CHRONIC INFLAMMATION OF THE BRAIN.

SYMPTOMS.

The symptoms of chronic inflammation of the brain are very much like the symptoms of insanity: there is either great mental excitement or depression; some absurd whim exists to gratify which every thing else must be sacrificed. Hesitation in speaking, stiffness of some of the muscles, headache, loss of appetite and constipation are among the prominent symptoms of this complaint.

As the disease progresses the evidence of cerebral disorder is more fully developed: the memory fails, the external senses become impaired, paralysis often shows itself, and the general health completely breaks up.

TREATMENT.

The duty of the practitioner is very plainly marked out here. "The general health completely breaks up." By a careful course of hygienic measures we must support the general system. This is indispensable, and is not in any case to be neglected; and while we do this we must combat the symptoms that present themselves. If there be great mental excitement or irritability, we must, to combat this symptom, depend upon opium or morphine, using cold applications to the head. If the depression be great we must depend upon stimulants—generous wine or brandy and beef tea. The bowels must be kept open, but not severely purged.

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This disease may run its course in a few months, or it may last for years. It is not of frequent occurrence.

TUBERCULAR MENINGITIS.

This is a disease of early life; seldom met with after the child is five or six years old.

SYMPTOMS.

A dry cough, peevishness, intolerance of light and sound, headache, giddiness, and other signs of cerebral congestion, together with general fever, presenting remissions at irregular periods. The skin is hot; the appetite capricious—sometimes bad, sometimes voracious; the tongue furred, and breath offensive; there is often nausea and vomiting, and the bowels disordered—generally constipated.

The child is drowsy yet restless; it sleeps badly, moans or grinds its teeth, screams and wakes suddenly in alarm.

In four or five days, if the disease is unchecked, the child wishes to remain quietly in bed; its countenance is expressive of anxiety and suffering; its eyes are kept closed, and it is annoyed by any light or noise. The pulse which has hitherto been rapid—say one hundred and twenty—falls now to eighty or ninety. The child now becomes stupid and heavy; convulsions frequently occur, and sometimes paralysis. In a week or two the drowsiness passes into profound coma, from which it is impossible to arouse the child. The pulse gets feeble, the extremities cold, and a cold clammy sweat breaks out over the body. The child is attacked with convulsions or paralysis, which soon end its sufferings in death.

TREATMENT.

The treatment of this disease in children has always been looked upon as very difficult. The disease being inflammative it was thought to demand the antiphlogistic regimen—bleeding, purging and antimony, which are measures the patient could not bear, they being strumous or scrofulous subjects, as they are. This difficulty is abolished if the observations made in the preceding pages are at all sound. Observation and common reason teach us that the less we deplete in this disease, and the more we act up to the spirit of the preceding pages, the greater will be our chances of success and the chances of the ultimate recovery of our patient.

Purgatives are very useful, and are the only articles we will use belonging to the fatal antiphlogistic regimen. It will be necessary to give a full dose of calomel, enough to purge at least every other day, in the commencement of the disease. But our main reliance must be had on *iodide of potassium*. This must be given freely—say to a child three years old, from one to two grains every four hours, dissolved in a tablespoonful of sweetened water. The local application of cold water by means of a cloth wrung out of cold water to the child's head will be of much service; this must not be neglected and it must be frequently changed.

If the child should become depressed, which it certainly will in the course of the disease, stimulants must be given it. A child, six or twelve months old, may take every hour or two a teaspoonful of Norton's Virginia, or Port wine, in as much beef tea; and if older the dose should be increased.

The child's system must be sustained, or it will pass from one to the other grade of symptoms above laid down, and death will soon close the scene. But with the above treatment and hygienia I feel confident that success will generally crown our efforts, and the great mortality under the old plan of treatment will be very much lessened. A fundamental principle in the practice of medicine is to sustain and not depress nature. Keep this in view and you can not materially err.

CEREBRO-SPINAL MENINGITIS.

An individual may have inflammation of the membrane of the brain, or may have inflammation of the spinal cord, or may have inflammation of both, in which case it is termed *cerebro-spinal meningitis*.

SYMPTOMS.

Sometimes the morbid action is set up in both situations at the same time, while in other instances the membranes of the brain are first attacked and the disease spreads downward, or vice versa. But it is remarkable that cerebro-spinal meningitis occurs sometimes as an epidemic. When this is the case it brings with it terror to the minds of the inhabitants, and under the depletory or antiphlogistic regimen it well may, for death marks its course; still the same fatal remedies are prescribed and the same fatal course is pursued.

The attack is commenced by acute pains, often of a burning character, in the back part of the head, extending along the spine, and sometimes into the limbs. The pain is much aggravated by motion or pressure, often simulating rheumatism, rigidity of the muscles of the neck and back, paralysis of the lower extremities, a sense of suffocation, retention of urine and obstinate costiveness. Sometimes in the course of this disease red or dark spots will appear on the skin, and from this circumstance the name has been given by the ignorant

of "spotted fever;" hence in some localities it is known and feared as spotted fever. I need scarcely say there is no such disease known to medical men as spotted fever—it is a myth. Such a disease, however, was reported to be away down in Massachusetts about the first of the present century; it has not been seen or heard of since by any medical writer. It was no doubt some species of typhus or congestive fever.

TREATMENT.

As has already been indicated, I will not recommend the popular treatment—depletion in the disease—but just the opposite. The treatment laid down for inflammation of the brain is, to my mind, the proper treatment for cerebro-spinal meningitis, only making the local application of cold to the back part of the head and spine as well as the crown of the head. In all other respects it should be treated precisely as inflammation of the brain. Care must be taken to see if the patient voids his urine; if he does not, it must be drawn off regularly with a catheter. My confidence is so great in the sustaining and palliative treatment laid down for these diseases that I recommend it most cheerfully. It has proved successful in my hands beyond my most sanguine expectations. It will prove successful in the hands of any careful practitioner who will study in the great school of nature and learn from her and her efforts his duty at the bedside of the sick. The successful physician must learn of her; he must know and second her efforts; he must sustain her when disease makes its assaults upon her; he must help her to ward off the blow; he must not join in with the enemy and help take away her strength by drawing from her the crimson fluid of life, for the blood is the life, nor must be lower her powers by the extravagant use of mercury and antimony.

A well man can not live long without food, but the sick man is expected to do for days and weeks almost entirely without it. Take the well man, if you please, bleed, and mercurialize him, purge him freely every day, bleed him until he faints daily, give him antimony freely, and blister him, at the same time allow him nothing to eat but a little thin gruel, and see how many weeks he will last. Can a sick man stand more than a well man? It would seem that physicians think so; by their actions they seem to say so.

It is a fatal mistake, and one that has caused almost as much premature death as disease has. I know the idea is thoroughly impressed on the minds of the people that the sick must not eat; and I know that any other theory than that of starvation will be looked upon with a good amount of skepticism and mistrust. But this thing has got to be reformed, and had as well be taken hold of now as to wait until countless thousands more of our fellow men perish. The lowering plan of treatment must be abandoned, and will be abandoned.

I want it to be understood that, in my theory of diet, it would be worse than folly to force food on a man's stomach when it is repulsive to that organ; it would only burden it with a weight that would not be digested, and would prove a positive injury to the patient. But if the system is becoming depressed, you can give him good wine or brandy, beef tea, &c., and when the stomach demands food you can make a judicious selection and give it to him; but you must use proper judgment and discretion about the quantity and quality of the food. The point I want to be remembered is this—that the system must be sustained, either in sickness or in health, by food or stimulants and tonics; that disease will lower the system and extinguish life only too fast

without any of your help. It is against this lowering of the vital forces that the physician must direct his best energies. "Curing disease" is a thing now almost unthought of by the intelligent physician. Patent doctors and quacks only harp aloud on that string. The intelligent physician only tries to guide the system, remove the cause if possible, palliate the symptoms, sustain nature through, and leave the work of cure where it properly belongs—to the vis nature medicatrix. Of itself it is sufficient to cure numerous diseases, in almost all its influence is beneficial, and moreover, the remedies that are in their own nature the best are only of use in as far as they stimulate, direct and control this inherent virtue.

PNEUMONIA.

Pneumonia is an acute inflammation of the substance of the lungs.

SYMPTOMS.

It is usually, ushered in by a chill or a sensation of coldness, followed by fever; in a short time a dull, obtuse pain in the breast is experienced, which is not so severe in its character as the pain in pleurisy, and which is considerably increased on coughing or making a full inspiration.

The breathing is hurried and difficult, especially when lying on the affected side; a dry, painful cough is present from the beginning, but sometimes it is moist, and the expectoration varies, both in color and consistence, being white, transparent and tenacious, semi-transparent, or rust colored, and frequently it is streaked with blood, which, however, is not an alarming symptom; the skin, with heat of the body, thirst, anxiety and flushed face, is sometimes swollen and of a purplish hue.

At the commencement the pulse is usually full, strong, hard and frequent, but as the disease progresses it becomes weak, soft, and often irregular. The tongue is generally dry and thickly coated with a white substance.

If the disease be connected with some derangement of the liver, the coat on the tongue will be of a yellowish or brown hue. Pneumonia is often associated with pleurisy, and still oftener with bronchitis, which complications may render the true character of the disease very obscure. This, however, practically, is not of great importance, as the treatment will not vary much between inflammation of the pleura or the bronchial tubes and the lungs. If the great principle laid down in this work, of sustaining and palliative treatment, be correct, it of course applies as appropriately to inflammation of one part of the body as to another. All inflammation, whether of the brain, membrane, veins, muscles or mucous or serous membrane, are of the same general character; consequently the course of treatment, to be correct in principle, must be the same in character.

And if you find the same treatment recommended for all cases of inflammation do not charge me with routinism, but give me credit for carrying out the great and correct principle that I have laid down.

Pneumonia may be said to consist of three stages. The first stage, that of engorgement of the lungs; the second stage may be termed that of hepatization; and the third that of gray hepatization or purulent infiltration.

Pneumonia may affect one lung or both, or, technically speaking, it may be double or single. The right lung suffers from inflammation nearly twice as often as the left; about once in eight cases both are affected. The lower lobes are more obnoxious to inflammation than the upper. The average duration of the disease, when uncomplicated, is about fourteen days; when complicated, about twenty-one days.

TREATMENT.

After what I have said in regard to the treatment of inflammation but few remarks will be necessary on the treatment of pneumonia. Bleeding, mercury and anti-

mony are the agents upon which we have been taught to rely. Whatever may have been the nature of this disease in years that have gone by I can not tell, but I am certain such treatment applied to pneumonia now would prove most disastrous. The first thing that should be done is the opening of the bowels; this may be done by a dose of three or four of the compound cathartic pills U. S. D., or it may be done with oil or citratized magnesia. The patient must be kept very quiet in bed. The room must not to be too hot; if in winter, the air can be kept moist by the evaporation of boiling water. The temperature should not be allowed to fall below 60° Fahr. Half an ounce of the liquor of acetate of ammonia may be given, with eight or ten drops of the wine of colchicum, every four hours. If there be pain or restlessness, some of the preparations of opium—say Dover's powders, ten grains once or twice a day, according to the urgency of the symptoms—may be given. If the pain in the side or chest be very severe, a cloth wrung out of warm water with a few drops of turpentine dropped upon it must be applied over the pain.

All else that will be necessary will be plenty of cold ice water and beef tea to drink. The diet should be light, and after the fourth day a teaspoonful of the syrup of squills may be given five or six times in each twenty-four hours. Care should be taken when a crisis comes of sweating or diarrhea not to check it unnecessarily. Tonics, such as quinine or tincture of barks, should be used during convalescence. The patient may need stimulants during the last stages of the complaint; keep the bowels gently open, use cold drinks, Dover's powders and beef tea. It will be noticed that I frequently recommend the use of beef tea. I do so because it is the very best article of nourishment that I know of; but if it is

unpalatable or can not be had, other things may be used in its place. Chicken tea is a good substitute, or mutton tea, &c. Should the inflammation end in gangrene, stimulants and tonics will be required; give also liquorice, sodæ chlorinate three teaspoonsful, laudanum a half teaspoonful, camphor mixture eight ounces; mix and give one ounce three times a day. Brandy and nourishment must be given freely. A fomentation of poppy heads or hops may be used alternately with the turpentine stupes. The feet may be bathed and kept warm by hot rocks, bricks or bottles of hot water. The above treatment will look quite simple for such a fearful disease as pneumonia, particularly to those who have been used to the heroic plan. But it is a fact well substantiated by statistics that under the antiphlogistic regimen more patients die, or a greater proportion of patients die, than there does of those who are treated by diet alone. This is true, and is a sad comment on the practice. This will appear from the reports of hospitals; and if any thing can be gained from experience and statistics in the way of knowledge and to guide us in the future, we ought to avail ourselves of it and be governed by facts, whether they sustain any preconceived notions of ours or bolster up any cherished theory.

It appears, from the published statistics of the Royal Infirmary of Edinburgh, that upward of one-third of all the patients affected with pneumonia who entered during a period of ten years died. The total number of patients with pneumonia entering the Royal Infirmary of Edinburgh from July 1st, 1839, to October 1st, 1849, was 648. Of this number were cured 388 and 38 relieved—in all 426, while 222 (a fraction over one-third) died.

These patients were treated by the antiphlogistic regimen, bleeding and antimony, with low diet. The

mortality is fearful. M. Louis records 107 cases, of which 32 died—about 1 in 31-3. It may be, I think, safely stated that the deaths in the hospitals treated by the regular antiphlogistic treatment will average one in from three to four.

Dr. Dieti treated 380 cases of primary pneumonia, in the charity hospital of Vienna, of which 85 were treated by bleeding; 68 got well and 17 died. 106 by large doses of tartar emetic; 84 got well and 22 died. And 189 by diet only; 175 got well and 14 died. In the cases treated by diet alone the mortality was only about 1 in 13 1-2.

Dr. Bennett treated 78 cases of pneumonia, in the Royal Infirmary of Edinburgh, by the use of salines in small doses during the febrile excitement, with a view of diminishing the vicosity of the blood. When the pulse became soft he ordered beef tea and nutrients, and if there was weakness, from four to eight ounces of wine daily. As the period of crisis approached he gave a diuretic, consisting of half a drachm of nitric æther, sometimes combined with ten drops of colchicum wine, three times daily, to favor the excretion of urates. The result of this simple practice in the 78 cases was, 75 were cured and 3 died—only a mortality of 1 in 26.

Now, if statistics are worth anything at all, they establish the supremacy of the sustaining treatment over the antiphlogistic, and in fact the treatment by diet alone is much better than the depletory system.

It will be observed that Dr. Bennett has treated his cases without opiates, and without any care whatever of the skin—two very important things in the treatment of diseases attended with any febrile symptoms, exudation or pain. He has also neglected to use any local applications, while it is a conceded fact that great advantage can be derived from the use of cold to an inflammation

in the first stage, and warm fomentations or poultices in the more advanced stages.

With these plain, common-sense principles before you, it does seem to me that the successful treatment of pneumonia is an easy thing. Do not try to cut the inflammation short; you only endanger the life of the patient without a shadow of chance to cut short the disease. Content yourself with trying to pilot him through the turbulent stream to a safe landing, which you will succeed in making twenty-five times out of twenty-six—a result that can not be reached by any antiphlogistic regimen ever practiced.

The average duration of the disease under the antiphlogistic regimen is about from eighteen to twenty days, while the average duration under the sustaining plan or system is only about fourteen or fifteen days.

Now, if the statements above given are to be relied on —and they certainly are, for they are given by no less authority than Dr. Bennett himself—it would be madness to continue the antiphlogistic treatment in inflammatory diseases at least; and if they are worthless in that class of disorders, where can they be recommended? The question presses for an answer.

PLEURISY.

Pleuritis is an inflammation of a membrane in the chest called the $pl\epsilon ura$.

SYMPTOMS.

The symptoms are much like the symptoms of pneumonia, the disease being sometimes taken for pneumonia.

Pleurisy usually commences with chills, succeeded by heat and thirst, restlessness, and other ordinary fever symptoms. These are followed, sooner or later, by an acute pain in the side or chest, which is much aggravated on making a full inspiration, and is accompanied with hurried, difficult breathing and a dry, hacking cough. Sometimes the pain occurs as the very first symptom. Coughing, breathing and moving about increase the pain, as well as lying on the affected side. Persons laboring under an attack lie upon the unaffected side and endeavor as much as possible to breathe without much expansion of the chest, respiration being chiefly performed by the muscles of the abdomen, and when effusion takes place the patient will shift his position and lie on his back. The pulse is hard, strong and frequent, the tongue is coated, the patient is very restless, the urine scanty and high-colored, and the bowels torpid. The pain may be located at one spot, but generally it extends over a large extent, and sometimes implicates both sides of the chest. When the substance of the lungs is also inflamed there

may be an expectoration of mucous, which will be streaked with blood if the disease has extended to the bronchial mucous membrane. In from forty-eight to sixty hours the pain lessens or ceases entirely, indicating that effusion has taken place; but in severe attacks the pain will continue long after effusion has occurred.

TREATMENT.

The same general rules may be observed in the treatment of pleurisy that are laid down for the treatment of pneumonia. One indication, however, in the treatment of pleurisy is, to produce if possible free perspiration. This can often be done by the use of tincture of Virginia snakeroot in teaspoonful doses every half hour in one or two ounces of pleurisy root tea. In connection with this the patient may take a large dose of Dover's powders, say fifteen grains; this will to a very great extent ease the pain while it will most likely produce perspiration. Scarification and cupping to the amount of three or four ounces of blood from the painful side will often give temporary relief, so, also, will fomentations of hops, tansy or other bitter herbs. The bowels may be kept open by the use of the compound cathartic pill, U.S.D. The diet should consist of gruel, or boiled milk, or milk and water; the drinks cold—nothing so good as ice water. The belladonna ointment smeared over the painful part is good palliative treatment. If the patient is in a condition that he can take a spirit vapor bath it will forward our views in producing perspiration. The patient should not, under any circumstances, be subjected to the "antiphlogistic regimen," his system should not by any means be lowered; if it is, and then effusion should take place, his chances for life are greatly lessened, if indeed his case is not entirely hopeless.

If the above means prove insufficient and effusion takes place, we must then endeavor to promote absorption. A succession of blisters must be applied to the diseased side, while purgatives and diuretics are to be given. The citratized magnesia will answer for the purgative, and sweet spirits of nitre, in teaspoonful doses, in one or two ounces of pleurisy root tea every two, three or four hours, or a tea made of watermelon seed will sometimes answer. The iodide of potassium, in from two to four grain doses three times a day, must be taken. It can be taken in two or three teaspoonfuls of pleurisy root tea. If the iodide of potassium does not agree with the stomach, syrup of iodide of iron may be given in doses of from twenty to thirty drops three times a day. The use of mercury should not be resorted to in this stage of the disease. The diet must be light and nutritious.

INFLAMMATION OF THE LIVER.

Hepatitis.—Inflammation of the liver may be confined to the peritoneal covering of the liver, to its substance, or a part of it, or it may involve the whole of these. The inflammation has been divided into acute and chronic.

In disease of the liver there is a great amount of ignorance displayed, both by professional men and their patients, who not only attribute nearly every form of disease to an abnormal condition of this organ, but are impressed with the mistaken idea that blue pill or calomel only are the true remedies for its cure. The consequence of such views have been truly lamentable, for it

is rarely that a patient thus treated has escaped without some permanent and harassing affliction. No preparation of mercury is required in the treatment of diseases of the liver. Dr. Abercrombie's observation remains true, that mercury is employed "with very undefined notions as to a certain specific influence which it is believed to exert over all the morbid conditions of this organ. If the liver is supposed to be in a state of torpor, mercury is given to excite it; and if it is in a state of acute inflammation, mercury is given to moderate the circulation and reduce its action."

SYMPTOMS.

The acute species of this complaint comes on with a pain in the right side, extending up to the shoulder, which is much increased by pressing upon the part, and is accompanied with a dry, short and frequent cough, oppression of breathing, and difficulty of lying on the left side, together with nausea and sickness, and often with a vomiting of bilious matter; tongue coated. The urine is of a deep, saffron color, and small in quantity; there is loss of appetite, great thirst and costiveness, with a strong, hard, frequent pulse. When the disease has continued for some days the skin and eyes become tinged of a deep yellow.

The *chronic* species is usually accompanied with a morbid complexion, loss of appetite and flesh, costiveness, indigestion, flatulency, pains in the stomach, a yellow tinge of the skin and eyes, clay colored stools, high colored urine, depositing a red sediment; an obtuse pain in the region of the liver, extending to the shoulder, and not unfrequently with a degree of asthma. The patient often finds it almost impossible to lie on the left side—this is when the liver has become much swollen

and its weight causes the pain. The symptoms are, however, often so mild and insignificant as to pass almost unnoticed, as large abscesses have been found in the liver upon dissection which in the person's life time had created little or no inconvenience, and which may have been occasioned by some previous inflammation. Hepatitis, like other inflammations, may end in resolution, suppuration, gangrene or scirrhus, but its termination in gangrene is a rare occurrence.

TREATMENT.

This may be commenced in the *acute* by the use of the spirit vapor bath; as soon as this is given the patient must be wrapped in a blanket and put to bed with a jug of hot water or with hot bricks to his feet.

A fomentation of hops or tansy must be applied over the region of the liver, and a large dose of the citratized magnesia or castor oil, with a third or half grain of morphine, must be given.

The nitrate of potash in ten grain doses three times a day should be used as a diuretic. The bowels must be kept in a soluble condition by the use of salts and senna or magnesia, and a Dover's powder, consisting of ten grains, should be given every night. As soon as the febrile symptoms begin to give way quinine, in one or two grain doses, must be given four or five times a day. Great attention must be paid to the skin; it must be sponged at least once a day with tepid water, to which a little saleratus or soda has been added. Wine or brandy must be used if it become necessary to sustain the system.

The treatment for chronic inflammation of the liver must consist in keeping the bowels gently open and the use of the iodide of potassium—three grains three times a day, dissolved in one or two teaspoonfuls of water. Tonics and stimulants are indicated, and must be given mildly. The diet must be nutritious and easy of digestion. The system should be built up and sustained. Traveling in agreeable and pleasant company will be found very beneficial. A large strengthening plaster may be worn to advantage over the region of the liver.

INFLAMMATION OF THE STOMACH.

GASTRITIS.

This consists in an inflammation of the lining mucous membrane of the stomach, which may also involve the peritoneal coat or covering. It may be either acute or chronic.

SYMPTOMS.

A burning heat in the region of the stomach, with swelling, pain, nausea and vomiting; this is aggravated by everything taken into the stomach, by pressure, by motion, and by a full inspiration.

If simply the mucous membrane is affected there will not be much if any pain. In all inflammations solely of mucous tissue there is little, if any, pain; it is other tissues becoming involved, either from sympathy or from extension of the inflammation to them, which causes the pain.

Difficulty in swallowing will be experienced from a spasmodic condition of the esophagus; great thirst is a constant symptom, and a very troublesome one, as all

fluids taken into the stomach in any quantity are ejected by it immediately; restlessness, rolling of the body and wakefulness, hard, contracted and frequent pulse, heat and dryness of the skin, great anxiety, oppression and prostration, are present when the disease is fully developed.

The tongue is clean, with elevated papillæ, the countenance is shrunken and contracted, and sometimes there is a harassing cough, the point and edges of the tongue are red, and the bowels constipated. As the disease augments in violence the difficulty of breathing increases, as well as the pain caused by deep breathing; there is great depression, with faintness, hiccough, an intermittent pulse, cold, clammy sweats, coldness of the extremities, tympanitis, delirium, stupor or convulsions, and death.

CAUSES.

Among the causes of inflammation of the stomach may be reckoned acrid substances taken into it, such as arsenic, mineral acids, oxalic acid, corrosive sublimate, improper food, *alcoholic drinks*, gout, bilious fever, wounds, or drinking cold water in too great a quantity when the body is much heated, or over fatigue by exercise.

TREATMENT.

If the inflammation is caused by any improper substance taken into the stomach the first thing to be done is to have it ejected by a prompt emetic, or remove it by means of the stomach pump. If an emetic is determined upon, a tablespoonful of ground mustard in half a pint of warm water will act as promptly as anything that can be given, or twenty-five grains of ipecac in half a pint of warm water is sure to act. As soon as this is done, give the proper antidotes for the poison, which will be found

detailed under the head of "Poisons and their Antidotes."

After the ejection of the poison the inflammation may continue; if so, the body should be well sponged with tepid water, or if the patient is able, a spirit vapor bath should be given, after which the patient may have mustard applied to the stomach, feet, ankles and spine, or fomentations of hops, tansy, &c., applied to the same localities. A full dose of morphine should be administered and continued at proper intervals to quiet the patient. For the thirst he may take small quantities of cold, mucilaginous drinks, or, what is better, hold ice in his mouth and occasionally swallow lumps of it.

The bowels must be moved once a day by injection of castor oil, molasses and warm water, after which brandy toddy and strong beef tea should be injected well up into the rectum three or four times a day. Recollect that depression is a prominent symptom and *must* be properly attended to, or combated by sustaining the system. This can not be done in the ordinary way, and therefore must be done by injection.

This disease is a dangerous one, often terminating fatally in a few hours.

The stomach must be disturbed as little as possible, and emetics should never be given except to remove some acrid or poisonous substance. Cold applications to the stomach have sometimes been very beneficial in allaying the inflammatory symptoms. The patient's feelings should be consulted in this matter; in fact it is always safe to consult the patient's feelings in the use of cold or warm applications—nature always seems to appreciate that which is best for her ills. This is a rule that should guide us in almost every thing, even in the most critical cases. It is always safe to listen to the voice of nature; her discriminations are always good and her

judgment is unerring. The physician who studies in her school and listens attentively to her counsels is the most successful.

Chronic Inflammation of the Stomach.

The term "dyspepsia" is almost always applied to this disease. This is not proper; the diseases are distinct and should be treated as such—it must not be confounded with "indigestion."

SYMPTOMS.

Pain in the region of the stomach is one of the first symptoms, especially soon after eating; the appetite becomes irregular and fastidious; the food is poorly digested: in consequence accumulation of gas takes place. The appetite will sometimes be very craving, but on eating a mouthful or two the patient is satisfied or becomes nauseated. At other times the appetite will be entirely lost, with an unpleasant taste in the mouth. The thirst is as variable as the appetite. The dull, lancinating pain may extend from the stomach to the back and edges of the ribs, or there may be a sense of tormenting heat in the stomach. The tongue is covered with a whitish fur, and is almost always of a vivid red at its tip and edges, or the whole surface of the tongue may be smooth, glossy and red. With the increased redness of the tongue the pulse will be found small, tense and threadlike. Coldness of the extremities is a common symptom; emaciation often, if the disease is not removed, takes place more or less rapidly;

the patient becomes hypochondriacal, and may linger out a term of years in constant misery.

CAUSES.

This disease is frequently a sequela of the acute form, but it more often supervenes an attack of small-pox, scarlet fever, typhus, &c. Intemperance in eating and drinking is the most frequent cause of chronic gastritis.

TREATMENT.

The first thing to be done is to regulate the patient's diet, and if he is intemperate, to see that he abstains from alcoholic drinks. His diet had better be rice, barley water, or chicken tea, or some other of the nutritious and easily digested articles. His drink may be slippery elm water well iced, and taken in small quantities, but often. When the symptoms have begun to subside a more nourishing diet should be given; but if solid food is allowed, it must be most thoroughly masticated. The meals should be small and often. His body should be bathed by means of a sponge bath once or twice a day; tepid alkaline water should be used.

Constipation of the bowels must be overcome by the use of injections. The stomach had better not be cumbered with any medicine. The patient should take exercise in the open air if he is able; good, cheerful company should always be sought, and a cheerful disposition maintained if possible.

In addition to proper nourishing articles of diet, such as beef tea, rice, boiled fresh milk, &c., it may be necessary to administer brandy toddy by injection. This will become particularly necessary if the patient has been in the habit of indulging too freely in drink.

Persons afflicted with this disease are too apt to burthen

their stomachs with various drugs, all of which prove to be a positive injury to them. These patent nostrums in the shape of "bitters" must be avoided if the patient would ever recover from his malady. Care to general health, with a strict dietary system, will almost always speedily cure.

INFLAMMATION OF THE SPLEEN.

ACUTE.

It comes on with a remarkable shivering, succeeded by great heat and intense thirst, pain in the left side about the lower ribs, and a tumor or swelling that can be plainly felt under and just below the lower rib, extending sometimes downward and forward almost to the pit of the stomach.

The paroxysm for the most part assumes a quartan form. When the patients expose themselves for a little time to the free air their extremities immediately grow very cold. If a hemorrhage happens, the blood flows out of the left nostril. The other symptoms are much the same as those of inflammation of the liver.

Like the liver, the spleen is also subject to a chronic inflammation, which often happens after agues, and is called "ague cake." Heat, fever, tension, tumor and pain in the left side, increased by pressure, are its characteristics.

TREATMENT.

Much the same as inflammation of the liver. In the chronic form of inflammation of the spleen, as in other chronic affections, no rapid cure can be made. The preparations of iron are useful in this complaint. I usually give it in the form of the tincture, twelve or fifteen drops three times a day in half a tumbler of water. In cases where the enlargement is considerable iodine may be used to advantage; a good form is the sugar coated pill of iodide of iron.

Particular attention must be paid to the skin and general system. A sponge bath in tepid water to which soda has been added must be had daily, and the diet generous, with a little malt liquor or wine.

INFLAMMATION OF THE KIDNEYS.

NEPHRITIS.

The inflammation may be located in the kidneys or in the lining membrane, but usually both are implicated. Often the bladder, testicles, and other parts of the urinary organs are affected through sympathy.

SYMPTOMS.

These are much the same as the febrile and chilly symptoms of other inflammatory attacks. The prominent symptom is a deep-seated pain about the loins, in the region of the kidneys, which pain is aggravated by firm pressure, by jolts and by moving about. The pain frequently shoots down to the groin, with a numbness of the thigh and a drawing up of the testicles. The pain is diminished by bending the body forward. There is a

frequent desire to pass urine and the effort is attended with much pain and difficulty. The skin is hot and dry, the tongue furred and yellow, the pulse hard and quick, there is more or less vomiting of bilious matter, while the bowels are constipated, and the patient lies best on the affected side when only one side is affected. When both kidneys are affected there may be suppression of urine, with stupor, terminating rapidly in death by poisoning from urea.

Acute nephritis runs its course rapidly and may terminate in resolution, suppuration, occasionally in induration, but rarely in mortification.

CAUSES.

It may be induced by mechanical injuries, cold, strains of the back, intemperance, the internal use of turpentine, cantharides or gravelly concretions, &c.

TREATMENT.

The disease runs its course so rapidly it is necessary for the treatment to be prompt; it may be commenced by the use of the spirit vapor bath, and when the patient is placed in bed with the jugs of hot water to his feet, a warm fomentation of bitter herbs may be placed over the region of the kidneys and ten to fifteen grains of Dover's powders given. This course will quiet his system, ease his pain and cause him to sweat profusely. In the course of ten or twelve hours he should be well sponged with warm alkaline water and given the balsam of copabia in slippery elm bark tea; he should also take a full dose of senna and salts. If signs of depression occur stimulants and tonics must be freely used, such as brandy toddy and quinine, with a nutritious diet. Iced slippery elm water should be used continually for a drink. In all cases of inflammation tea and coffee must be prohibited.

Chronic Inflammation of the Kidneys.

This is frequently the result of an *acute* attack, though it may occur from other causes, such as mechanical injury, a peculiar character of the urine, or from a long course of intemperance.

SYMPTOMS.

Weakness in the small of the back, heavy, obtuse pain in the region of the kidneys. The urine is evacuated irregularly in small quantities and at oft repeated intervals, and yields a deposit on standing. The urine is most commonly alkaline. It is occasionally turbid or white and milky in appearance. The bladder sometimes becomes irritable and painful. Dropsical swellings and weakness of the lower limbs are often met with in the advanced stages. The pulse in bad cases becomes frequent and small, hectic fever ensues, with emaciation, night sweats, great debility, and finally death.

TREATMENT.

The first thing to be attended to in this complaint is the skin, diet, and general habits of the patient. The tepid alkaline sponge bath (by which is meant warm water to which soda has been added) once a day, and, if the patient is able to stand it, the spirit vapor bath or the Turkish bath once a week. The diet should be carefully selected, and consist of such articles as are nutritious and easy of digestion. Tea, coffee and alcoholic drinks must be avoided.

Iodide of potassium in two grain doses, in half a wine-glassful of slippery elm bark tea, should be taken twice a day, and the following diuretic taken twice a day in teaspoonful doses, in elm bark tea also: Sweet spirits of nitre, one ounce; copaiba and canada balsam, of each half an ounce; oil of juniper, oil of cubebs, and oil of anise, each two drachms: mix.—King's Am. Practice.

The bowels must be kept regular, which had better be done by means of injections. Moderate exercise in the open air must be enjoined. Radishes and watermelons, when they can be had, will be found of great value to any person laboring under this complaint.

INFLAMMATION OF THE BLADDER.

CYSTITIS.

The inflammation may attack the mucous membrane of the bladder or its muscular coat. It may, like inflammations of other organs, be either acute or chronic.

SYMPTOMS.

A severe burning or throbbing pain, with tenderness, in the region of the bladder, increased by pressure upon it, is the first symptom of this complaint. The desire to urinate is constant, and is accompanied with great difficulty and pain; it may pass away drop by drop, or it may be entirely suppressed, causing a swelling of the bladder and great distress. The pain may extend to the urethra. The urine commonly contains more or less mucous. There is generally fever, dry, hot skin, thirst,

and constipation of the bowels, with frequent ineffectual attempts to evacuate them. Sometimes nausea, vomiting, restlessness, and great anxiety is present.

In unfavorable cases, as the disease advances, a low typhoid condition ensues, there is low delirium or stupidity, pale, hollow and death-like countenance, and the patient dies in coma or convulsions.

CAUSES.

Exposure to cold, active diuretics, as turpentine or cantharides, injuries, the careless introduction of bougies or catheters, translation of gonorrhea, or injections of an irritating substance into the bladder.

TREATMENT.

This must be very nearly the same as has been advised for the acute inflammation of the kidneys. The bowels should be evacuated by the use of salts and senna or the citratized magnesia. The skin should be treated to the vapor bath and frequent alkaline sponge baths. Dover's powders must be taken in ten grain doses. Fomentations of hops and tansy should be applied over the bladder; cooling and mucilaginous drinks should be used freely. If the bladder becomes much distended and the urine can not be voided, it must be drawn off by the use of a catheter, which must be introduced slowly and with very little force.

If depression and typhoid symptoms set in, tonics and stimulants must be used freely, with a diet of beef tea and other nutritious articles. Opium enough may be used to procure rest.

Chronic Inflammation of the Bladder.

CHRONIC CYSTITIS.

This is a chronic inflammation of the mucous membrane of the bladder. It is generally associated with some disease of the prostrate gland.

SYMPTOMS.

A dull, uneasy sensation of pain is felt in the region of the bladder, with a frequent desire to urinate and difficulty in retaining the fluid in the bladder. The urine is mixed with mucous, which, on standing in a vessel, settles to the bottom, leaving the urine clear. Several pints of this tenacious mucous have been voided by some patients in a single day. Generally, when the calls to urinate are frequent, its discharge will be accompanied by spasmodic contractions of the bladder, and a painful, burning sensation along the urethra. There is a persistent feeling of uneasiness in the region of the bladder, a degree of heaviness in the perenium, pain and weakness in the back and loins, sometimes extending to the testicles.

CAUSES.

Chronic cystitis may follow the acute form, or it may be brought on by a course of intemperance, highly seasoned food or excessive venery.

TREATMENT.

After giving proper care to the skin and the diet of the patient we should give proper diuretics. The diuretic drops referred to for the treatment of chronic inflammation of the kidneys is, perhaps, the best preparation that can be used for this, by adding a little laudanum.

Recipe: spirits of nitre, one ounce (fluid); copaiba, half an ounce; Canada balsam, half an ounce; oil of juniper, two drachms; oil of cubebs, two drachms; oil of anise, two drachms; laudanum, four drachms—mix. Take one teaspoonful three times a day in slippery elm tea. In addition to this the patient should be kept from the use of spirits, tea and coffee. His bowels should be kept open by means of injections, and all the general rules of health strictly observed. Exercise in the open air should be enjoined.

It has been recommended to inject into the bladder certain astringent articles, but I think the practice is not a safe one. Cold, mucilaginous drinks may be used freely, such as iced slippery elm tea or watermelon seed tea. Watermelons, in their season, may be used freely.

If any symptoms of weakness appear, stimulants and tonics must be had resort to, with good diet, &c.

BRONCHITIS.

Bronchitis is an inflammation of the mucous membrane of the bronchial tubes or air passages into the lungs. It is a common disease of children and by no means uncommon among adults. It may be acute or chronic.

SYMPTOMS.

The first symptoms of acute bronchitis resemble those of cold. A chilly sensation is first felt, succeeded by fever, cough, rapid pulse, with pain in the upper part of the breast. At first the cough is hard, dry and painful, but soon expectoration of a clear, tenacious mucous takes place, which gradually becomes purulent. expectoration is often profuse, and in infants is attended with a wheezing, rattling sound, rendering breathing very difficult, particularly in a recumbent position. When the obstruction to respiration is considerable the countenance becomes bluish on account of imperfect oxygenation of the blood-not enough air penetrating the lungs, where, of course, the process of oxygenation takes place—a process necessary to life. At other times the face is flushed, with an expression of distress or anxiety. There is apt to be pain in the head, particularly the forehead, which is much aggravated on coughing. When expectoration commences freely the cough generally abates, and in a week or ten days convalescence ensues. The tongue is in bad cases loaded, the

urine is scanty and bowels costive, the breathing rapid and made somewhat difficult by the accumulation of the mucous.

Acute bronchitis is very common as a secondary affection in small-pox, measles, whooping-cough, scarlet fever, etc. It is sometimes complicated with pneumonia. Bronchitis often arouses a latent tubercular disposition into activity, and consumption frequently dates from its occurrence. Pain in the upper part of the chest, with a frequent dry, hacking cough and a small, clear, mucous expectoration are the prominent symptoms of bronchitis.

CAUSES.

It may be a complication or sequela of some other disease, as above mentioned, or it may be caused from cold, change of temperature, etc.

TREATMENT.

This may be commenced with the foot bath. The feet may be bathed for fifteen or twenty minutes in a salt water bath, as hot as it can be borne, then the patient should be placed in bed and a hot brick or two, or jugs of hot water, placed to them; a flannel cloth may then be wrung out of hot water and a dozen drops of spirits of turpentine be dropped on it and applied to the upper part of the breast, over the pain. This treatment in mild cases, with a dose of Epsom salts, will usually be enough to give relief. But if the case be a severe one, and the pain and distress in the chest be severe, it will be necessary to treat it by inhalations also. This may be done by placing a pint of warm water in a large bowl, or other vessel, and add to it half a teaspoonful of tincture of iodine, and then place in the vessel a hot rock or piece of iron—small, of course—only large enough to

make a moderate steam, which the patient can inhale by placing his face over the vessel. This should be continued for a few minutes at a time and repeated two or three times a day. When this is done a full dose of Dover's powders—say ten grains—to which two grains of powdered ipecac has been added, must be taken.

The foot bath should be frequently repeated and the cloth on the chest frequently renewed. The Dover's powder should be repeated in six hours.

At the commencement of the case, if severe, a cathartic of salts and senna should be given, and allowed to operate before the Dover's powder is given. Afterward the bowels may be moved by the usual cathartic injection of castor oil, molasses and warm water. If perspiration can not be produced by themeans above recommended, the spirit vapor bath may be resorted to.

The patient should be carefully watched, and, if depression seems to set in, stimulants and a nourishing diet must be given.

CHRONIC BRONCHITIS.

There is not often to be found any fever in chronic bronchitis; the cough is generally the prominent and troublesome symptom. This, however, in mild cases, in fine weather, may be very slight, and in fact disappear entirely; but on the return of cold or changeable weather it becomes troublesome. It is worse at night and in the morning, particularly if the feet—damp with perspiration—are placed in contact with a cold floor or cold sheets, etc. Upon the expectoration of mucous the fits of coughing become somewhat relieved. Sometimes slight, transient pains are experienced in the chest, and frequently after a severe paroxysm of coughing a general aching

pain will be felt for some minutes in the chest. The mucous expectoration becomes thick and is sometimes streaked a little with blood. The tongue will be found coated in the morning and the appetite will generally be poor. As the disease advances the pulse becomes quick, weak and small, the breathing short, more hurried and oppressed, with emaciation and night sweats; face pale, eyes hollow or sunken, great debility, diarrhea, sore nose, and the lips purple. The expectoration becomes more copious and more purulent and fetid. This distressing form may continue from one to several months, if not removed, and then prove fatal. It presents many of the characteristics of tubercular consumption, from which disease it is difficult to tell it—only by auscultation and percussion. This is the consumption that is sometimes cured in the advanced stages. These are the cases that lull the people into the belief that some pert son of Æsculapius has delved into science so deep that he has found the great healing balm that will not only stay the hand of decay upon that delicate mass, the lung, but will replace the part that has been consumed and sloughed away. When man becomes able to create then this may be done, not sooner.

CAUSES.

Chronic bronchitis may occur as a sequence of the *acute*, or it may result from the diseases mentioned as causes in the acute form, or it may occur from the constant exposure to irritating powders, such as stone-cutters, millers, workers in metals, &c.

TREATMENT.

This may be commenced by the use of the "spouge alkaline bath" once a day, with the application of some irritating application to the upper part of the breast over

the seat of pain. For this purpose a liniment—croton oil one drachm, and sweet oil one ounce—may be rubbed over a section of the breast, about two or three inches square, once or twice a day. The object of this is not to blister or produce a sore, but simply to produce an irritation or redness of the skin. If the liniment is not sufficiently strong to do this, more croton oil must be added; if too strong, which is the more likely, more sweet oil must be added. Now, this irritation wants to be carried just as near to blistering as possible without blistering. The patient should take internally every morning five grains of iodide of potassium in at least two ounces of sweetened water, after which he should take a moderate draught of cold water. At noon he should take from three to five copaiba and cubeb capsules, which may be procured at any drug store, and at night he may take a full dose of Dover's powders (ten grains). His bowels must be kept regular by the use of injections, his exercise must be moderate but regular, and his diet should be most carefully selected. You see him on the road, the great highway of debility; you see his system getting lower and lower day by day. This highway is the direct "air line" to death; "no change of cars," "no delays," but "directly through." He must be switched off or he will soon land at the great depot, the port of all our destination. But, to drop the figure, unless you sustain the patient by a judicious plan of nutriment he will sink. We have already seen that his appetite is poor, and we know if he is not well sustained by food he will rapidly sink into the grave. Beef tea here must play an important part; fresh, raw eggs must be well beat and suited to the taste of the patient by adding water, sugar and a little Jamaica rum or sherry wine; milk, rice and other articles that are light and nutritious must be given, and solid food, beef, mutton or poultry may be used; small quantities but often will be the best plan. Good rye whisky toddies may be used with all other means to nourish the patient.

DYSPEPSIA.

We now come to the consideration of a disease of the stomach. This organ is one of great importance; upon its healthy action depends much; in fact, upon its healthy action depends the health of the general system. It has already been urged upon the attention of the reader the grand importance of feeding and sustaining the system.

In a former article diseases have been divided into two great classes—nutrition and innervation. Nutrition depends upon the normal action of the stomach; hence the subject is one of the most vital importance. Yes, indeed, upon the healthy action of this *much-abused organ* depends the all-important subject of nutrition.

By dyspepsia (from a *Greek word* meaning difficulty of digestion) is generally understood all those functional derangements of the stomach which are primary in their origin—that is, not dependent upon, or symptomatic of, inflammation or other disease in the economy. Such a disordered condition is exceedingly common, and often causes the despair of the physician, arising, as it frequently does, from causes which are obscure or, if discovered, beyond his control. This will become apparent by considering, in the first place, those circumstances

which require to be united to secure a healthy digestion. These are—1st, A proper quantity and quality of the ingesta. 2d, Sufficient mastication and insalivation. 3d. Active contractility in the muscular coat of the stomach. 4th, Proper quantity and quality of gastric, biliary, pancreatic fluids. 5th, A consecutive and harmonious action of the intestinal canal. Dyspepsia or indigestion may be produced by any cause which occasions derangement of one or more of these conditions; and hence it is why so many different circumstances may produce somewhat similar symptoms, and why so many different remedies have been found effectual in various cases. Notwithstanding that you will frequently meet with instances which baffle all preconceived rules, there can be no doubt that a careful attention to the essential physiological conditions above enumerated will, in the great majority of cases, conduct you to a successful rational treatment.

CAUSES, SYMPTOMS AND TREATMENT.

Of all the causes of dyspepsia excesses in *eating* and *drinking* are the most common. An over-distended stomach, or too rich a meal, not unfrequently induces a feeling of weight or fullness in the epigastrium, nausea, and eructations of acid, bilious, or gaseous matters, with a loaded tongue, headache, and other general symptoms. This is acute dyspepsia. Occasionally there is more or less vomiting of bilious matter, when the attack is vulgarly called a "bilious attack."

If called to treat such a case, immediately on its occurrence and before the ingesta has left the stomach, as determined by the sense of load at the epigastrium and by percussion, an *emetic* should be given, and if vomiting be present it should be assisted by warm drinks. As

soon as the stomach is quieted, or, if you have been called in at a late period, when the ingesta have passed into the intestines, a purgative should be administered -five grains of calomel and five of colocynth-followed in a few hours by a draught of salts and senna or a Seidlitz powder. If necessary, also, an injection may be given. The purging, with a day or two's confinement to a food consisting mostly of bread, or what is termed a farinaceous diet, will generally get rid of such an attack; but their frequent repetition leads to the chronic form of dyspepsia, in which careful regulation of the diet, with exercise, must constitute the chief treatment. Hence the advantage of what is termed "change of air," and much of the benefit which is derived from watering places. Chronic dyspepsia, however, is far more commonly caused by the excess of spirituous and vinous drinks than by eating, and in such cases abandonment of the evil habit is a sine qua non in the treatment.

Tea and coffee drinkers are very liable to the disease, and its frequency among females is probably owing to over indulgence in these beverages.

Tobacco chewers and smokers are also very obnoxious to it. Dr. Bennett observes, "It may frequently be noticed that those who have acquired the habit of eating rapidly are more or less dyspeptic. I know a journey-man printer, who had been much tormented with indigestion, but who was cured by changing his residence. The reason of this cure was for sometime a mystery. On again changing his house the disease returned; still no apparent cause could be discovered. I ascertained at length that it depended not on the locality per se, but on its distance from the printing house. When far off he ate his dinner with his family rapidly, having only just time enough to walk home and back within the hour.

When he lived near, the time otherwise spent in walking was occupied in eating, or in cheerful converse with his wife and family. Since I made this observation it has often occurred to me that the distance of the residences of artisans from their places of employment may be the occasional cause of the dyspeptic symptoms they frequently suffer from."

The exact object of the saliva in the process of digestion, whether it be to convert the farinaceous compounds of the food into glucose, or by its vacidity to mix up air with the portions swallowed, is not positively determined; but its necessity for digestion is shown by what happens in cases where the under lip has been lost by accident or disease, or where salivary fistulæ have formed: in such cases dyspepsia is generall present, and in some the disordered digestion has been cured by operations that, by restoring the parts to their normal condition, prevent the escape of saliva. Again, persons habituated to the dirty habit of spitting are for the most part dyspeptic. In all cases when dyspepsia can be traced to this source the treatment becomes obvious.

The contractile movements of the stomach which, by kneading the ingesta (food) and keeping them in constant motion, secure their intimate admixture with the gastric juice, and the rapid transference to the duodenum of such portions of it as are transformed into chyme are evidently of great importance in the proper performance of digestion. The experiments of physiologists have shown that digestion goes on in gastric juice taken out of the stomach much slower than in the stomach, and that section of the pneumogastric nerves, by arresting the contractile movement, permits only the circumference of the mass to contract with the secreting surface to be digested. These facts at once explain the well known

influence of mental emotions upon the stomach. Contentment and hope are as favorable as dissatisfaction and despondency are injurious to good digestion. Nothing is more common than dyspepsia among literary men who overtask their mental faculties, among young persons of very excitable minds, and among individuals of a melancholy temperament, hypocondriacs, &c. It is in such cases that cheerful society, active and appropriate occupations, change of scene, removal from mercantile or literary employments, variety in trains of thought, and so on, are beneficial. Our knowledge with regard to the offices performed by the gastric, biliary and pancreatic juices in digestion has, of late years, been much advanced. Thus, the gastric juice operates more especially on the albuminous, and the pancreatic juices on the fatty compounds of the food.

The function of the bile is more obscure; it probably acts as a means of precipitating or separating some of the excretory matters from chyme and so facilitates assimilation of the nutritive portions. Digestion may be deranged by all those causes which increase or diminish too much the secretion of these three fluids. Thus excess of acidity in the stomach is one of the most common causes of dyspepsia and is associated with that form of it which accompanies scrofulous and tubercular diseases. It may be in such excess as to neutralize the alkaline section of the pancreatic juice and render it incapable of emulsionizing fatty matters. In such cases the alkalies with bitter tonics and the direct introduction of animal oils in excess are indicated. On the other hand, the gastric juice may be diminished in quantity, as frequently occurs in persons who suddenly overtask the powers of the stomach at feasts or in old persons with feeble digestion. The sense of load after eating is

generally indicative of slow digestion from this cause. In acute cases a stimulant rouses the stomach to increased action, and hence the moderate use of drams and generous wines after dinner is occasionally useful. In old persons the sense of load and feebleness is best removed by giving up tea and drinking at night a little brandy and water. In chronic cases acids are indicated, especially muriatic acid. The tincture of iron is useful in the cases of chlorotic females. The prepared gastric juice of calf has been lately recommended as a remedy in these cases, and is in some cases of much service. We have no distinct means, as far as I am aware, of rousing the pancreas into action, and yet many cases are on record in which fatty matters have passed undigested through the alimentary canal in consequence of obstruction to the pancreatic duct, In such cases, and in all those in which fatty matters are difficult to digest, alkalies, especially the bicarbonate of soda, with vegetable tonics, are indicated. When the bile is deficient constipation and dyspepsia are usual results, and are to be relieved by gentle mercurial purgatives. For this purpose use five grains of blue mass and ten grains of rhubarb at night, and if it should not operate by morning use castor oil. Excess of bile, on the other hand, ought to be treated with more active cathartics. The U.S. Dispensatory comp. cath. pill, in doses of three or four at night, will answer this indication. The spirits of nitre or some other diuretic must also be used. Exercise and the spirit vapor bath must not be neglected.

A derangement of the consecutive and harmonious action of the alimentary canal is another frequent cause of dyspepsia, for it is as necessary that those portions of the food which are not assimilable should be removed out of the economy as that the nutritive materials should

be absorbed. Hence whatever impedes the contractility of the intestinal canal, whatever alters the structure of its mucous membrane, or whatever mechanically obstructs its calibre, induces dyspeptic symptoms.

The removal of these various conditions, whether by stimulating the nervous centres, by appropriate diet, or by purgatives and astringents, need not be more particularly dwelt upon here. I would only observe that the constant use of laxatives, however they may temporarily relieve, can not cure, and that in all chronic cases proper action of the bowels must be obtained as much as possible by means of dietetic and hygienic regulations. In many cases of dyspepsia two or more of these classes of causes may be combined so as to render the indications for treatment complex and apparently contradictory. In other cases one or more causes may exist, although from the indications present their nature can not be determined; in such cases our treatment must be always more or less vague and unsatisfactory.

Lastly, there are a few instances where dyspepsia can only be explained by *idiosyncrasy*, in which we find this or that particular article of diet to derange the digestive functions, and in which avoidance of the offending cause is the only plan of treatment that is attended with success.

In addition to the different kinds of dyspepsia to which your attention has been directed, it is practically important to keep in remembrance the leading symptoms which may be present. The symptoms are, anorexia (loss of appetite), acid eructations, sense of load at the stomach, vomiting, flatulence, palpitation of the heart, and cephalalgia (headache).

I have already alluded to the mode of treating most of these symptoms. Palpitation of the heart often occasions alarm in young dyspeptic persons, and in such cases, besides remedies directed toward the stomach, change of scene, removing the attention from the affected organ, and varied reading, should be enjoined. The sense of load in the stomach is most frequently removed, as I have previously said, by acids; and sour eructations and cardialgia (pain of the stomach, heart-burn) are best relieved by alkalies and bitter tonics. Vomiting and flatulence are often very troublesome symptoms. To check these sometimes the *liq. potass, muriatic tinc. iron*, or morphine may be used. A scruple (20 grains) of sulphate of soda will often prove of great benefit taken three times a day.

From all that has been said on the subject, the reader can not fail to see the importance of diet in this complaint. The patient must study this well, and only eat such things as agree best with his stomach. The food must be changed often, small quantities must be taken at a time, articles the most pure and easiest of digestion must be selected, much time must be taken in mastication, and a cheerful disposition must be maintained.

The skin must not be neglected. The alkaline sponge bath must be often used, moderate exercise must be taken, tea, coffee, tobacco and alcoholic drinks must be dispensed with, or the latter only used as a medicine in such cases as above recommended. Cheerful, lively company should be sought, and above all refrain from taking too much medicine, or in fact anything at all unless it is absolutely indicated by some urgent symptom. Depend principally on nature's efforts and diet for a cure, and if proper care is taken you will not be disappointed. The common practice of most dyspeptics of taking large quantities of medicine daily is improper and injurious;

it only serves to torture their abused stomachs and still more debilitates them, and will finally render a cure impossible.

DROPSY.

DROPSY OF THE BRAIN—HYDROCEPHALUS.

This is in reality not a primary disease, but merely a result or sequel of an other disease (inflammation of the brain). Dropsy of the brain consists of an effusion of a watery fluid into the cavity of the brain.

It is a disease peculiar to children, and one that is generally attended with much danger; it is seldom found to occur after the fifth or sixth year.

SYMPTOMS.

It may be necessary here to describe the inflammatory stage, as well as that of the real stage of effusion which constitutes hydrocephalus. This inflammatory state may be ushered in suddenly by obstinate vomiting, high fever, thirst, heat of the surface, and especially of the head; the face may be pale and alternating with flushes, the eyes red, pulse quick, throbbing of the temporal arteries, aversion to light and sound; the head is either rolled about incessantly or the child lies still with an occasional cry of pain; it complains frequently of its head—if too small to do so by words, by raising its hand to the head often. The appetite is lost and the bowels constipated; the pupil of the eye is generally contracted

during the first stage of the disease. Sometimes a convulsion is the first symptom we notice of the disease.

The disease, however, does not always set in so abruptly. The first symptom sometimes is, loss of cheerfulness—the child losing a taste for his usual enjoyments—headache, frequent knitting of the brow, occasional deep-drawn sighs, grinding of the teeth, with a pale, collapsed appearance; disturbed rest at night, with sudden startings from sleep in alarm, or with a scream; the appetite soon becomes impaired, the bowels constipated; there is more weakness in one leg than the other; the temper is irritable and the head aches; there is pain in the bowels, an unpleasant smell of the breath, vomiting, especially on moving, tenderness of the abdomen on pressure, which is not tumid but concave. All the senses are at first morbidly acute, but gradually lose their power as effusion takes place.

The stage of effusion may be preceded by a sleep, or an apparent improvement of all the symptoms, which, however, is delusive. The delirium subsides or occurs occasionally; the pupil of the eye is permanently dilated, and ceases to contract even on the approach of light. The child falls into a state of stupor from time to time, and, frequently an agonizing scream is heard; the moaning is almost constant; the eyes are half closed, exhibiting a glazed appearance. The disease may last for several weeks, and then terminate in death by a convulsion or coma; about three weeks is the average.

TREATMENT.

The treatment in the stage of inflammation must consist of cold applied to the head by means of a thin cloth wet very often and drawn lightly over the head, or by pouring a small stream of water a short distance on the

head for a few seconds occasionally; this, however, can not often be done, as the child will fret and do itself more injury than the operation will good. Ice pounded up and placed in a bladder and put to the top of the head is the best plan, but this must be done with some caution, and not applied too long at a time, or it may produce too great depression. The feet may be bathed in warm water, and kept warm by means of hot bricks, etc.

The child at the commencement may have a full dose of salts and senna tea to operate freely on its bowels; after this the bowels may be kept open by means of a syringe, at least during the stage of inflammation. The skin should be frequently bathed with the tepid alkaline sponge bath. The child must be kept in a state of quietude, avoiding all sources of irritation; the room should be darkened. The gums must be cut if teething.

If effusion takes place the case is almost hopeless; the applications may be continued to the head, feet, and body, as above directed, and a cathartic of compound powder of jalap—which is made by taking senna in powder four drachms, jalap in powder one drachm, ginger five grains; mix. The dose for a child three years old is about one-eighth of a teaspoonful, taken in milk, wine or cider. This may be repeated every three hours until a free action is had on the bowels. Iodide of potassium may be given to a child of two or three years in half-grain doses, in a teaspoonful of water, three times a day. A little milk should be given the child if it is not nursing. If it is, all the better, but if it is not, and the stomach will not take food or retain it, a little beef tea may be injected into its rectum several times a day.

Children predisposed to affections of the head (and the head is the general seat of children's disease, while the chest is the part most subject in middle life, and the abdomen in old age) should never be given blows on the head; in fact this is a reprehensible practice, and I have often been led to wonder that sane, intelligent parents would so far forget themselves and do so great a wrong to the child as to give it a blow on the head, or, as an infuriated mother will sometimes term it, "a slap on the jaw." This brutality should be left exclusively for the animals of the P. R., who are just now so numerous about St. Louis.

Many a child has been rendered an idiot by or from the ultimate effects of a thoughtless blow on the head from an angry mother, while thousands of others have been sent to the grave by hydrocephalus from an unnatural blow, even light, on the tender head. It seems strange that parents filled with love for their children—flesh of their flesh and blood of their blood—would need a caution like this; but who has not seen many of these dear little creatures, that our blessed Saviour desired should come unto him, reel in agony and stagger from a blow dealt them by an unnatural parent on their tender heads.

Still I know this is not often the result of any lack of feeling on the part of a mother, but thoughtlessness and a lack of knowledge as to the amount of injury such a blow might produce. I hope that no mother or father whose eye ever passes over this article will ever again be guilty of the *criminal act* of striking a child a blow on the head or face.

CHRONIC HYDROCEPHALUS.

This is rarely met with. It may occur from infancy to old age; it may occur in infants before their birth.

SYMPTOMS.

The most striking feature of the disease is the enlarged head. In infants this proceeds rapidly, owing to the separation of the bones of the head or sutures; but even when the sutures are ossified the enlargement has taken place. This increase of size is confined to the vault of the cranium only (upper part of the head). As the disease progresses the senses become impaired, the pupil dilated, and the child finally presents the appearance of an idiot and sinks into indifference and coma; convulsions often takes place, followed by paralysis.

TREATMENT.

This should be the same as recommended for the effusion after the *acute* inflammation. Puncturing of the cranium has occasionally proved successful, and in so hopeless a disease, when other means have failed, may be performed. Compression has also proved successful in some instances, but in others it has brought on convulsions.

DROPSY OF THE CHEST.

This term is applied to a collection of serous or watery fluid within the cavity of the *pleura*. It may exist alone, but generally prevails as part of a more universal dropsy.

SYMPTOMS.

First, oppression and difficulty of breathing is experienced, which is increased when the body is in a horizontal posture or on any considerable exercise. The patient can not lie on the side of the chest opposite to the one affected. He generally, in the advanced stages, assumes nearly the sitting posture. There is a short, dry cough,

frequent shiverings, sense of heaviness at the pit of the stomach, loss of sleep (insomnia), unpleasant dreams and sudden startings, palpitation of the heart, occasional faintings, &c. The affected side becomes enlarged and round. Upon percussion (striking) the side in which the fluid exists will have a dead sound, like striking the thigh or any solid flesh. When the patient is erect, sitting or standing, the fluid goes down.

CAUSES.

Cold, injuries or obstructions to the circulation, want of proper nourishment, general debility, long protracted fevers, &c. But one great cause of this form of dropsy is the *intemperate use of spirits*, especially among *beer*, *gin* and whisky drinkers. Inflammation of the pleura also often gives rise to it.

TREATMENT.

Diuretics, hydragogue cathartics, tonics and nutrients are the means, in connection with sudorifics and a proper attention to the skin. The hydragogue cathartic may consist of jalap fifteen grains, cream of tartar thirty grains, podophyllin half a grain. Administer this for a dose and repeat it every six hours, if the patient is able to stand it; if not, only two or three times a week. For a diuretic the patient may use ten grains of nitrate of potassa three times a day, or two teaspoonfuls of spirits of nitre three times a day. For a tonic, tincture of Peruvian bark or tincture of iron. For the sudorific influence, if he is able, the spirit vapor bath may be used two or three times a week, and at night Dover's powders. I again wish to call attention to the sustaining plan, which becomes doubly necessary in this case, as the medication is calculated to lower; the very best nutritious diet must

be had, but it must be easy of digestion; fluids should be taken very sparingly. Thirst may be quenched by using little lumps of ice, or by taking cold water in small quantities.

Moderate exercise must be taken, and every means employed to promote the general health.

Sponge baths should be taken daily. A gin "egg nog" may be indulged in three times a day.

The tonics must be used long after the water disappears, to prevent a relapse.

DROPSY OF THE ABDOMEN—ASCITES.

This disease consists of a collection of water in the peritoneal sac, or the general cavity of the abdomen. It is sometimes, however, found between the peritoneum (or the membrane that lines the inside of the abdomen) and the muscles of the abdomen; it is also sometimes found in sacs upon or connected with some of the viscera, as the ovaries, liver, &c. It is then termed encysted dropsy. Ascites may occur in either sex, or at any age, but is, like other forms of dropsy, chiefly met with in persons of advanced age.

SYMPTOMS.

Dropsy of the abdomen occasionally commences by what is called cellular dropsy, especially of the lower extremities. But it is generally preceded by a dry skin, cough, loss of appetite, oppression at the chest, costiveness and a scanty urine. In a short time a slight enlargement of the abdomen is observed, with a disagreeable feeling, and some tenderness when pressure is made; the whole abdomen then becomes uniformly swollen and tense.

Difficulty of breathing is experienced when a horizontal posture is maintained; the face is pale and bloated, pits on pressure; the thirst is great, the stomach and bowels are deranged; colic pains are frequently felt. By applying one hand on one side of the abdomen, while the patient is sitting or standing, and striking gently on the other side with the tip of the fingers of the other hand, a distinct fluctuation will be felt; sometimes it can be detected by the ear.

TREATMENT.

This must be conducted much in the same manner as that for dropsy of the chest.

The diuretic—the nitrate of potash, in ten grain doses, three times a day, or spirits of nitre, or the hydragogue cathartic; the jalap fifteen grains, cream of tartar thirty, and half grain of podophyllin, every six or twelve hours, or as the patient is able to bear it; the spirit vapor bath, sponge bath, and the Dover's powders at night; and particularly the tonics of Peruvian bark, and the nutritious diet, egg-nog, &c.

In addition to all that has been said on the treatment of dropsy of the chest, in this (dropsy of the abdomen), when the water begins to recede from the abdomen, a bandage must be applied around it, loose at first, but gradually made tighter, so as to support the abdomen; this must be worn for sometime after the water has all disappeared. It is often the case that after the water has passed out, and in fact before, the abdomen seems tender; when this is the case a liniment of oil of origanum two drachms, aqua ammonia four drachms, alcohol six drachms, and sweet oil two ounces—mix—should be applied once or twice a day, for several weeks, over the whole abdomen.

In all other respects follow the directions given for the treatment of the dropsy of the chest. After the water has been removed from the chest, and the cathartics stopped, the bowels may be kept open by the use of the syringe.

CELLULAR OR GENERAL DROPSY—ANASARCA.

This disease consists of a collection of fluids in the cellular membrane of the external parts of the body—chiefly beneath the skin.

It may be of the lower extremities or it may be of the whole body. The swelling is always regular and uniform, and of a soft feel, leaving a pit or depression when pressed upon by the finger, which slowly returns to its former fullness.

SYMPTOMS.

Swelling of the feet and ankles is usually the first symptom noticed in this form of dropsy, which increases in the evening, particularly if the patient has been standing or walking considerably. This swelling at first, generally, partly disappears by morning, or when a recumbent posture has been maintained for some hours. The swelling is soft, elastic, and pits upon pressure. The skin looks paler than usual. The swelling gradually extends up to the body, and then over the whole body, even the eyelids becoming swollen. Occasionally the fluid oozes out through the skin, or raises the skin in elevations, resembling a blister.

The countenance is sallow, the bowels costive, the skin dry and shining, with more or less thirst. As the disease progresses there is a sensation of general debility, with sluggishness and inactivity, and a slow fever.

When the watery accumulation becomes general the

vascular and cellular structures of the lungs become affected, occasioning difficulty of breathing, coughing, and a watery expectoration.

CAUSES.

Upon the causes of this form of dropsy the treatment will much depend. It may be caused by any circumstances that will produce a debilitated state of the body; but this fact affords one valuable suggestion in regard to its treatment, i. e., it is caused by debility, and in order to effect a cure a different state of affairs must be produced or brought about.

It frequently follows febrile or inflammatory attacks. Chills and fever, when permitted to run for a long time, often produce anasarca, also excessive hemorrhage, chlorosis, and the excessive use of alcoholic drinks. Sometimes it is owing to disease of the heart, spleen or liver.

TREATMENT.

As above hinted at, this must depend to some extent upon the cause. If it is owing to intemperance, no cure can be had until that habit is stopped; if from chills and fever, they must be stopped; if from any diseased organ, attention must be given it at the same time the water is being removed, or very soon thereafter.

The means for removing the water are the same as recommended for dropsy of the chest. A bandage should be used around the feet, ankles and legs as soon as the water begins to recede from them, and applied tight, renewing it two or three times a day.

Careful examination should be made, and the history of the case well looked up, so that the cause may be ascertained; and if caused by the presence of any disease, that it may receive early attention.

This form of dropsy, above all others, requires a sustaining treatment, while it is necessary to purge and give diuretics to get rid of the accumulation of water. The system must be sustained by the most judicious course of diet, stimulants and tonics.

The general health must be well looked after; feeding, exercise and bathing must be attended to carefully and perseveringly.

DROPSY OF THE SCROTUM—HYDROCELE.

This is a collection of water in the scrotum or bag which contains the testicles; it may be in some part of the testicle itself, or spermatic cord. It is not a dangerous disease.

SYMPTOMS.

A smooth, soft, elastic, and often transparent swelling commences in the lower part of the scrotum and gradually extends upward. The tumor finally becomes somewhat pear shaped, and feels like a bladder filled with water. No pain is produced by pressure, unless the testicle be compressed. A fluctuation of water can be discovered.

TREATMENT.

This may be done by tapping and bringing away the water. This is sometimes practiced, but it is not the proper course and will seldom make a cure. It is best to use the remedies recommended for other forms of dropsy, and try to carry the water away in that manner. This can almost always be done, but if not, tapping will become necessary. My practice has been to treat the patient for a few days, or a week or two, then if the water was not beginning to be removed to tap and draw it off.

This may be done with a common lancet. Be sure, however, that it is dropsy of the scrotum and not hernia, for it would be a serious affair if, by cutting into it, you should cut the bowels, which would be the case were it hernia. But this mistake need never be made, as water can always be detected when present. After drawing off the water continue the treatment as recommended for the other forms of dropsy, and it will not be likely to return again; if it does, however, tap again. Under this treatment I have never had it to fill above the second or third time.

I don't like the plan of injecting some stimulant into the scrotum to produce an inflammation, causing the scrotum to adhere to the testicles, thereby leaving no cavity for the water. This is the popular practice.

DROPSY OF THE HEART—HYDROPERICARDIUM.

In this affection there is an effusion of water into the pericardium, or the membranous sac around the heart. The symptoms in many respects resemble those of dropsy of the chest, and in fact it is not always that it can be determined from that disease.

Causes similar to those producing dropsy of the chest, or hydrothorax, will produce it; and the treatment is the same.

NEURALGIA.

This is a painful disease of the nerves, particularly the sensory nerves. The pains are sudden in their commencement, following the course of the nerves. They are of a darting, stabbing, boring, burning character, and are at first unattended with any local change that can be recognized. They are always intermittent, sometimes regularly and sometimes irregularly so. The periods of intermission are distinguished by complete freedom from acute suffering, and in recent cases the patient appears quite well at these times.

The word *neuralgia* has a general recognized force, and there is no equivalent to it which represents the whole group of disorders to which it applies, though there are numerous phrases for particular forms of the disorder.

SYMPTOMS.

Pain along the course of a nerve, generally the nerves of the face, though it is met with in different parts of the head, in the breast, side, hip-joint, and other parts of the limbs. Its attacks are usually sudden, and the paroyxsm of pain varies in its duration. The pain is agonizing, lancinating, and shoots along the nerves, frequently feeling as if red-hot wires were thrust into the parts. After the pain passes away a feeling of numbness remains for some time.

The pain occurs from time to time, at longer or shorter intervals, and is often produced by the most trifling causes. If not cured the system suffers, gets lower and lower, until the patient dies, worn out from the repeated shocks.

The symptoms vary greatly in different cases of neuralgia, according to the variety of the disease (of which there are several), still there are certain features which are observed in all true neuralgias. "In the first place," observes Sir Francis Edmund Ansite, "it is universally the case that the existing condition of the patient at the time of the first onset of the disease is one of debility, either general or special." Says the same author, "Another circumstance is common to all neuralgias of superficial nerves; and as a large majority of neuralgic affections are superficial in situation, this is, for practical purposes, a general characteristic of the disease. I refer to the formation of tender spots at various points where the affected nerves pass from a deeper to a more superficial fibrous fasciæ. So general is this characteristic of inveterate cases that Valleix founded his diagnosis of the genuine neuralgia on the presence of these painful points." The third general characteristic of neuralgic affections are, that the pain is intermittent, or at least remittent, in every stage of the disease.

The fourth general characteristic is, that fatigue and every other temporary depressing influence directly predisposes to an attack of acute pain, and aggravates it when already existing.

CAUSES.

Neuralgia may be caused by any thing that will produce general depression, or even temporary depression; a sudden shock, as of a fall, railroad accident, or any

thing that gives a jar to the central nervous system, or by severe mental emotion. Or it may be produced by direct violence to the nerves, by cutting, or by bruising wounds, by a local inflammation—as the eye—or by a decayed tooth, or any thing that is calculated to injure the nerve. Neuralgia in the face is oftener produced by a decayed tooth than in any other way.

TREATMENT.

Dr. Ansite observes, "The treatment of neuralgia may be classified under three heads: The first division includes all remedial measures which are intended to improve the general nutrition, including that of the nervous system, or to remove any vicious condition of the blood which may impair nervous function. The second division includes the narcotic stimulant remedies. The third division comprises all the remedies which are destined to exert a direct influence upon the affected nerve."

Under the head of *nutritive* remedies for neuralgia by far the most important sub-class is the series of animal fats. There is theoretical basis for the use of these substances which it is impossible to ignore.

If we take, for instance, the class of neuralgia which is most plainly and indubitably connected with impaired nutrition—those of advanced life, and particularly the inveterate forms of facial tic douloureux—there is the strongest ground, in the result of experience, for insisting upon the value of this kind of remedies.

Dr. Ratcliffe says, "It will be found that neuralgia patients have cherished a dislike to this class of (fatty) food of all kinds, and to have systematically neglected its use." And Dr. Ansite observes, that he has also obtained strong evidence that this is the general rule,

and the reverse a rare exception. And it has several times occurred to him (Dr. Ansite) to see patients entirely lose neuralgic pains, which had troubled them for a considerable time, after the adoption of a simple alteration in their diet, by which the proportion of fatty ingredients in it was considerably increased.

Cod liver oil occupies the highest rank among fatty remedies; when it does not immediately disagree with the stomach this oil is the best fat to employ. But in other cases butter, and especially cream, may be employed with great advantage; "and, in fact," says Dr. Ansite, "one of the most successful examples of the treatment of neuralgia, which I record, was treated solely by the administration of Devonshire cream, in increasing, and, finally, in very large quantities." Even the vegetable olive oil, though far inferior to animal fats, as a general rule, may occasionally be used with good effect. It is necessary in many cases to make a series of trials before we arrive at the particular form of fatty food which is best suited to the particular patient.

Iron, in any of its preparations, is only of use in cases of actual anæmia (lack of blood); in this the carbonate is the best form. The employment of the so-called nerve-tonics is of great use in some cases; of none at all in others. Quinine, arsenic and zinc are the only medicinal substances of this class which possess any solid claim to efficacy.

With regard to the efficacy of quinine there are the most conflicting opinions, except in one respect. No one doubts that in the neuralgias which are of malarious origin this medicine, though not infallible, is extremely efficacious.

It should be administered in all cases, which from their regular intermittence leave room for a suspicion that this may be their nature, in full doses, from five to ten grains, repeated two or three times during the intermission—just as you would do in regular chills and fever.

In a great number of non-malarial cases quinine also produces good effects; but there is no need, nor is it advisable, to employ it in such large doses. From two to three grains two or three times a day is quite enough. Quinine is said to be more useful when the neuralgia is in the ophthalmic branches of the fifth nerve (i. e., the branches about the eye) than it is in any other non-malarial form. Arsenic is a more widely applicable remedy, for it is useful in almost all cases, both of the malarial and non-malarial type. In the former it should be given in full doses—ten drops of Fowler's solution three times a day. This dose may be increased one drop a day until it gets up to fifteen drops. In the non-malarial forms half that quantity will suffice. The ordinary precautions must, of course, be observed as in other cases where we employ arsenic. If any of the disagreeable symptoms appear that it is known to produce, such as burning in the stomach, &c., it must be discontinued at once. But arsenic is a safe remedy in such doses. The sulphate of zinc enjoys the confidence of some practitioners, but I hardly think it worth mentioning. If neuralgia arise in a syphilitic patient it may be treated with iodide of potassium, or in gouty patients with wine of colchicum.

We now come to notice the narcotic stimulant remedies for neuralgia—opium, belladonna, alcohol, ammonia, etc. We know that these articles, when given in certain small doses, possess the common property of assisting nervous function, and of paralyzing it if given in large doses.

"Indisputably," says Ansite, "at the head of all this class of remedies stands opium." And we may consider

opium, as used against neuralgia, to be fully represented for every useful purpose by morphia. But opiates administered by the stomach can, after all, be only considered as *palliative*.

The invention of the subcutaneous injection has thrown quite a new light on the capabilities of opium as an antineuralgic. It may be confidently said that in the right use of this remedy we possess the means of permanently and rapidly curing very many cases and of alleviating, to a degree quite unknown before, the suffering caused by even the most inveterate forms of neuralgia.

Belladonna, in doses of one-sixth to one-half grain, is said to relieve ovarian dysmenorrhæa, as also some forms of superficial lumbo—abdominal neuralgia.

But belladonna is also best given by subcutaneous injection. The plan is to inject from one one-hundred and twentieth to one-eightieth of a grain. The dose to be injected of morphine is, one sixth of a grain, to be increased if necessary. This may be injected at any locality, wherever a fold of skin can be conveniently picked up. Dr. Reynolds recommends the Indian hemp. A good extract of this, in doses of from one-fourth to half a grain—rarely a grain—given in pill is very effective in some forms of neuralgia. It should be given every night whether there be any pain or not.

Muriate of ammonia is an excellent stimulant, and should be given in ten to twenty grain doses when it is required.

Sulphuric ether is said by Dr. Ansite to be a superior remedy in visceral neuralgias. It sometimes relieves gastralgia and neuralgia of uterine or ovarian origin; for the purely nervous form of angina pectoris it has no equal.

Alcoholic drink is a valuable article in the treatment

of neuralgia; but to be useful it must be, like opium, taken in small quantities. It may be dangerous to prescribe brandy or wine for this complaint, for the reason that the patient may indulge too freely, and drink not only to ease the pain by using stimulating doses, which really are of service, but they accustom themselves to drowning the pain with a larger narcotic dose, and thus contract a liking for the oblivion of drunkenness; but to a patient that can be trusted it is useful in moderate doses.

Sugar, or *saccharine* liquors and *saccharine* food, except in very moderate quantities, do not agree with neuralgic patients.

Of external applications, blistering has its advocates; but I doubt its utility, in fact fear it is a positive injury. I never thought blistering good policy when the nerves were irritable; still there is good authority for blistering, especially over the origin of the affected nerve. The chloroform liniment will often prove useful. Take of chloroform one ounce, sweet oil six ounces, and mix. This may be applied freely along the course of the nerves.

Nutrition should be good; it is absolutely necessary this should be as abundant as possible without deranging digestion. It must also contain a liberal amount of fatty matters. No amount of dislike on the patient's part—and they often show great dislike—should induce the physician to give up this point. If one form of fat can not be tolerated another must be tried. Equally important is the avoidance of exposure to cold and damp air with insufficient clothing. Flannel underclothing, thick veils for the face, etc., are quite as important as medicine. The general health must be attended to.

DELIRIUM TREMENS.

A disease brought on by the intemperate use of alcoholic drinks.

SYMPTOMS.

The first warning of the approach of delirium tremens is ordinarily given by the occurrence of complete insomnia (absence of sleep). The patient may have long indulged to excess in drink, or he may be quite a novice in intemperance, but in any case a greater debauch than usual has commonly been perpetrated; and the sufferer finds himself quite unable to obtain any sleep. It used to be believed that, in the majority of cases, the delirious effects were produced, not by the direct poisonous action of alcohol upon the nervous system, but by the circumstances of an habitually intemperate person leaving off the use of his accustomed potations. This is a mistaken idea, for patients are often attacked during a debauch, in fact, I may say always; for the leaving off drink for a day or two before the symptoms are developed is in consequence of the commencement of the disease. exhibit a repulsive feeling to strong liquors, which is, indeed, a part of the early symptoms of the acute dis-The short snatches of slumber the patient gets are disturbed by horrifying dreams and visions; and during his waking moments, even in broad day light, he suffers from hallucinations of sight, which commonly take the form of disgusting or terrifying objects, such as snakes, 28

insects, monsters, or of armed men pursuing him with threatening gestures.

Often the occurrence of distinct visual hallucinations while the patient is awake is the first sign of the passage from chronic alcoholism, which may have lasted for months or years, with a varying degree of insomnia, and habitual distressing dreams, to the acute affection.

During the first day or two the patient is much depressed, with slow and feeble pulse, cold extremities and a profuse sweating. The mental state is one of great anxiety, but there are usually no real delusions; even when visual hallucinations are present, the patient can, by an effort of the will, recognize them as such, and momentarily banish them from his sight. During all this time there is a complete want of appetite—no food is taken; this circumstance precipitates the second, in which the mere anxiety is exchanged for incoherence of speech and wild excitability of manner, which sometimes takes the shape of causeless anger (though even then often mixed with cowardice), and sometimes of great terrors, which the sufferer often accounts for by pointing to imaginary terrific shapes that seem to fill the room, and which he is constantly seeking to push aside with a restless motion of his hand. He talks incesantly in a rambling fashion.

He may generally be restrained to some extent by any looker-on who will speak to him in a firm voice, and he may be for a time partly reasoned out of his hallucinations.

The pulse is now quick, from 100 to 140 a minute; it is small and thready, but sometimes may be soft and voluminous; it resembles pulse in a typhoid type.

Muscular tremor, which, from its striking prominence

in many cases has given the disease its name of *delirium* tremens, is by no means universally present.

The face is generally flushed, but sometimes pale; sweating is nearly always present; the tongue is tremulous; its color varies.

This second stage may last two or three days, or longer, when we have what is called the sleeping stage, or *critical stage*, as it is termed by some.

At this period the patient falls into a continuous slumber, which, if it be sound and natural, is expected by some to be a sure sign of convalescence. This sign, however, is of no importance, for numerous cases have been observed in which the patient has sunk into profound slumber for many hours and has awakened as delirious as ever, or in a state of complete prostration, which rapidly terminated in death.

Sleep marks the commencement of convalescence only when we find the patient on waking clear in his intellect, free from hallucinations, or nearly so, and with a pulse greatly reduced in frequency. But, instead of sleep occurring at all, the patient may pass from mere delirium into a comatose condition, with mutterings, eyes open, soaring and fixed, picking at the bed clothes, or possibly stertorous coma, or violent convulsions, these symptoms being followed speedily by death.

In other cases, in the midst of violent delirium with great excitability, collapse suddenly takes place, the pulse becomes hurried and intermittent, the features pinched and ghastly, the breathing gasping, and death ensues in a minute or two.

TREATMENT.

It has been but a short time since the opinion universally prevailed that the delirious symptoms were owing

to the exhaustion, which was chiefly kept up by the want of sleep, and consequently that the production of continuous sleep for several hours was the sole and all-important means of cure. It was, therefore, the custom to ply the patient with larger and larger successive doses of opium, with a view of drowning the delirium in narcotic stupor. Great mischief arose from this wide-spread belief and practice. In the first place, it has often happened that the patient, without ever sleeping at all, has passed first into a state of coma-vigil, next of stertorous breathing, and at last sunk, fairly poisoned with opium.

Again, a fact which was disregarded by the earlier authorities was this—that, without exerting any poisonous action upon the centres of consciousness, opium occasionally spends almost the whole of its depressing force upon the visceral nerves. A minor consequence of neglecting this fact was, that the patient's chance of assimilating food was often entirely ruined by the paralysing action of the drug upon the digestive organs. A much more serious one was the accident, which has doubtless happened, and which Dr. Francis Edmund Ansite, one of the most eminent writers of the age on this subject, says has occurred in cases within his knowledge viz.: "the rapid induction of cardiac paralysis, the patient (without any cerebral signs of poisoning whatever) suddenly becoming ghastly pale, the pulse fluttering and coming to a stand still within a few moments."

The idea that patients in delirium tremens require to be narcotized into a state of repose may now be said to be abandoned by those best qualified to speak on the subject. In fact, the condition of the brain requires that sort of treatment which shall fortify and stimulate its functions. Every stimulant, when given in such doses as alone to deserve that name, is a promoter, but not an exhauster, of function, and the idea of any depressive recoil following its action is purely fictitious. There are, accordingly, a great number of remedies, of which the larger doses are narcotic, and the smaller stimulant, which in the latter form are capable of giving more or less relief to the symptoms of delirium tremens. It is not worth while to enumerate all these. The typical member of the group in stimulants is easily digested food; and the successful treatment of delirium tremens, in nine cases out of ten, depends on the regular and continuous supply of suitable nutriment, whereby the functions of the nervous system are supported during the struggle toward recovery. The principal kinds of food which are desirable are, milk, soup, or strong broth, with bread in it (and given very hot), beef tea, rice, and some of the concentrated meat food, and raw egg, beaten up well, diluted a little with water and sweetened enough to make it palatable. The necessity for the administration of some nutriment of this kind is imperative; and if the stomach at first be too irritable for it, it must be given by injection, so as not to lose a day, nor even a few hours. If the patient be young and robust, it will be well to give him a purgative of citratized magnesia, or salts and senna; let the dose be a full one if a large quantity of spirits has been drank. It is a well known fact that large quantities of alcohol are actually taken into the circulation; by the purgative it will be eliminated to some extent. When the strength of the patient is sufficient to allow of this plan being safely carried out, it will be found that the subsequent assimilation of food is rendered more easy and rapid, and that the stage of convalescence is comparatively soon attained. But in debilitated subjects this plan is not to be attempted;

with them commence at once with the administration of the more easily digested foods, in small quantities, frequently repeated.

The irritation of the stomach may be combated by the administration of ice and of small quantities of soda water. One of the best modes of commencing feeding is by the administration of milk, mixed with one third of its bulk of *lime-water*; give it in small quantities at frequent intervals.

I will not stop here to argue the *moral* of giving alcoholic drinks in delirium tremens, but say that those who have been long in the habit of depending on alcohol for a large part of their nutrition must have it, to a limited extent. Opium or morphine in small doses will generally be required—not, however, in large doses. Morphine had better be used in only one-fourth grain doses, three times a day; it ought to be used only by hypodermical injections.

I come now to mention an article that must soon take its stand at the head of all others for the treatment of delirium tremens, in connection with nutritious food, viz.: bromide of potassium, in twenty-grain does, repeated every two or three hours, until sleep occurs.

This article seems to better fulfill the indications than any other yet tried. ι

Tartar emetic has been used and recommended, but my advice is, never touch it. Also let chloroform and digitalis have a wide berth. They are not adapted to general use in this complaint.

To the patient I would say, let your sufferings and dangers be a warning. Never, never humiliate yourself again in this manner. It is degrading to every feeling of refinement; and remember that a drunkard's couch is not a good place to start to heaven from.

PILES—HEMORRHOIDS.

Piles consist of tumors seated at or near the verge of the anus, which, when ulcerated, are liable to bleed at each effort to evacuate the bowels.

CAUSES.

The local causes of piles may be any thing that will create engorgement and distention of the hemorrhoidal veins, as straining from constipation, pregnancy, constant sitting on warm cushions, or hardened excretory matter remaining too long in the lower bowels; or the excessive use of tobacco, which, relaxing the anal muscles, favors congestion of the part, in a plethoric habit; or the congestion created by irregular menstruation may act as a predisposing cause.

SYMPTOMS.

As hemorrhoidal tumors are due to vascular changes in the rectum, which induce inflammatory and neuralgic irritation, the earliest symptom of their presence is a sense of fullness and irritation, or soreness about the anus, which is especially marked for an hour or so after an evacuation. Soon these symptoms become distinct, creating the sensation of a foreign body being in the rectum, and giving rise to a feeling of dissatisfaction, or a repeated desire to stool; the pain extending back toward the sacrum and spine, or toward the bladder

and down the thighs, from the nervous connections of the The feces are now sometimes streaked with blood, or the paper is tinted, or about a teaspoonful of blood escapes toward the end of the stool; itching is also developed near the anus, this being often due to ecphyma, while the parts are constantly moist, and the linen soiled with pus or blood. The escape of blood generally gives temporary relief, but, if often repeated, creates weakness. At the next stool the tumors may be more engorged, and the patient will recognize their presence with the finger. If they continue to be constricted by the sphincter ani, or if any irritation increases the afflux of blood to them. they will then be more tumid, hot and painful; and, if now inspected, will be found to be violet-colored, smooth, shining, and exquisitely painful to the touch. As the irritation continues the sphincter ani participates in it and contracts spasmodically, causing the patient to scream violently with the shooting character of the pain, while evacuating the bowels creates horrible torture: the tumor then becoming much blacker and larger, and terminating sometimes—if left unreduced—in ulceration of the part after a day or two. Sometimes, on the contrary, the spasm passes off, and the tumor is then less engorged. until, after forty-eight hours, it is quite flacid, and the patient may be comparatively comfortable, or only suffer at the period of evacuations. The constricted condition, with the irritation and intense suffering just described, is usually said to be due to a "fit of the piles."

The long continuance of hemorrhoids usually causes great disorder of the digestive, circulatory and nervous functions; the patient being liable to dyspepsia, flatulence, colic and a sense of constriction, or sinking about the navel, while he is troubled with palpitation of the

heart, a quick, irritable pulse, and general symptoms of weakness.

Not unfrequently his entire moral character is changed, becoming cross, peevish, irritable and irrascible, quarreling with every one, and not unfrequently resorting to the use of alcoholic drinks or opium to deaden his sensibility, which only adds to the difficulty.

TREATMENT.

The treatment of piles may be either palliative or radical. The palliative consists in administering, every day, before the patient goes to stool, an injection of a full pint of cold flax seed tea, or of cold water—though the first is preferable. Then the parts, after defecation, should be well bathed in cold water, the bowels kept free by mild purgatives, and some of the balsams or terebinthinates be occasionally administered.

The following is a valuable remedy when the tumors ulcerate and bleed; it's action is directly on the mucous membrane: Turpentine emulsion, one ounce; balsam of copaiba, one ounce; honey, two ounces. A tablespoonful at bed-time each night until the bowels become free and the irritation is relieved.

If the tumors are external, a wash of tannin, sugar of lead and laudanum will give some relief.

I have frequently known the use of an egg, well beat, and mixed with a little water and sugar, and sometimes a little good wine, taken in the morning soon after getting out of bed, to regulate the bowels. If one a day is not enough, it may be repeated one, two, three, or four times a day. If persevered in it will finally get the bowels into a soluble state, at the same time giving tone to them and the general system. I have known a case of piles of over ten years' standing cured by this simple

course alone. It is always worthy of a fair, patient trial. The radical treatment of piles consists in destroying the tumors in patches by the use of nitric acid or other caustics, or in their entire removal by the wire ligature or the scissors.

Strong nitric acid, when applied for the relief of piles, as suggested by Houston, of Dublin, is especially applicable to those cases in which there is much bleeding, with marked ulceration and thickening of the mucous coat over the pile. It proves useful by its caustic effects, inducing sloughing, and subsequently the cicatrization of the ulcer. It also changes the action of a chronic swelling or induration of tissue, so as to cause the effused lymph to serve the purposes of healthy organization, instead of creating a diseased enlargement in the connective tissue around the veins. In applying it the piles may either be protruded, or else the rectum be dilated by means of a glass speculum with an opening in its side, the opening being turned to the tumor; then with a camel's hair pencil dipped in a little of the strong acid touch the tumor in a longitudinal direction, so as to destroy entirely the vitality of the part touched, without permitting the acid to spread to the adjacent parts. order to do this best, but a few drops of the acid should be put upon the brush, and the adjacent parts should be previously painted with sweet oil, with which the cauterized portion should be washed immediately after the application of the acid.

The advantages claimed for this treatment by Houston are—safety from hemorrhage, and contraction of the vessels and tissues consequent on the separation of the slough. The objection to its use is the continuance of severe pain when the cauterization is not sufficient to kill

the parts, or when any portion of the acid escapes on the skin at the verge of the anus.

Thweatt, of Virginia, and quite a number of other surgeons of the United States, have treated piles successfully with the nitric acid. Cooke, of England, has also related, in the London Medical Times and Gazette, a number of cases of piles cured under the use of the nitric acid. He applied a little lint dipped in the acid to the pile, and pressed it there for fifteen or twenty minutes; during this time the pain was severe, though the cures were rapid.

The ulcer left by the separation of the slough requires the treatment of an ordinary ulcer.

I have neither space nor inclination to go into a detailed account of the treatment by excision, or by the wire ligature. They sometimes—or at least the former—may become necessary and practicable, but I deem the directions above given sufficient, and in every respect preferable. The dangers that have been incurred in the excision of piles and the suffering consequent on the ordinary method of applying the ligature are facts that every experienced surgeon must have frequently noted.

GRAVEL AND STONE.

By the term gravel we understand a collection of sand or small particles of stone in some part of the body, in the kidneys, ureter, or bladder.

CAUSES.

The waste or disintegrated portions of the system are, to a great extent, carried off in a solid state in the urine, under the form of several acids, alkalies, calcareous earth and other substances; but from irregularities in diet, or from disease, one or more of these matters may exist in excess and will be deposited at the bottom of the urine voided, after it has stood for a short time. Occasionally, however, the accumulation of these matters becomes so great that the deposit occurs in the kidneys or some part of the urinary organs, from whence it passes into the bladder, thus giving rise to gravel. In perfect health no deposit is found in the urine. Gravel is formed in the kidneys, of varied chemical compositions, though it generally consists of uric, oxalic, or phosphoric acids, with certain salts, such as lime, ammonia, magnesia, soda, silica, iron, etc.; or with a peculiar substance, recently described under the name of cystine.

Among the causes of this complaint may be reckoned a vitiated action of the kidneys, hereditary predisposition, the father and son for many generations laboring under the complaint. The continued use of hard cider is said to be a cause of gravel.

SYMPTOMS.

As it is apparent that calculi originates in the kidneys, the earliest symptoms of the tendency to the formation of these bodies will usually be found in connection with this gland; thus there will be pains in the loins, this pain being at times much more severe than at others, and resembling when at its height the pain of colic, for which it may be mistaken, particularly when accompanied, as it sometimes is, with vomiting, and a peculiar sense of constriction in the region of the stomach, as if the patient was bound around that organ with a cord, the urine being scanty and high colored, and often mixed with blood. There is also very apt to be a burning sensation in the urethra, due to sympathetic irritation.

When gravel or a pebble passes into the ureter, if its size is such as to present any obstacle to its free passage, a new train of painful symptoms is rapidly developed; thus there will be pain in the course of the ureter, violent spasmodic contraction of the cremaster muscle, the testicle being often drawn quite up to the external abdominal ring, a fact which is of much value as a means of diagnosis; while if these symptoms continue for from twenty four to forty-eight hours, there will very often be present more or less febrile reaction, heat of skin and diminished secretions, this condition being usually terminated by sudden relief. This relief is caused by the passage of the stone to the bladder, and is another valuable diagnostic symptom. When the stone has thus passed to the bladder there is difference to be observed in the symptoms, in urinating the stream being frequently and suddenly arrested by the stone coming over the orifice at the neck of the bladder and closing it. In a few moments after the stream will again begin to flow freely,

as the stone has rolled away. There is pain now about the neck of the bladder.

TREATMENT OF GRAVEL, OR NEPHRITIC COLIC.

The passage of a pebble through the ureter is very painful, and demands prompt treatment. Chloroform is now considered to be the proper remedy for this; it relieves by producing relaxation and allowing the pebble to pass into the bladder. It need not be carried to the fullest extent, for partial anæsthesia seems to answer every purpose. But if chloroform is not at hand, or seems to be contra indicated, a full dose of morphine or opium should be given; if this fail, a cathartic must be given—senna and salts will answer for this purpose. The spirit vapor bath is indicated here, or a warm hip bath, to relax the system as much as possible.

Diuretics must not be given while the pebble is in the ureter, on any account.

Having reached the bladder, the pebble may afterward, if not too large, be passed by the urethra. For this purpose mild diuretics and plenty of slippery elm tea or water may be used.

If the pain or irritation of a fit of the stone, as it is called, is very great, the palliative plan of treatment becomes necessary: Opiates, the hip bath, and a free use of slippery elm water, and an injection into the urethra, consisting of morphine, half a grain, and slippery elm water, one or two ounces. Alkalines should be used.

If the stone does not come away in due time, the operation of lithotripsy or of lithotomy must be performed.

The health must be improved by means of diet, exercise, baths, etc., in order to prevent further accumulations of the sand and stone in the bladder.

SCURVY—SCORBUTUS.

(GERMAN) SCHARBOCK.

These terms take their origin from the Danish Skorbeck, "disease of the mouth," of which the word "Scorbutus" is a barbarous latinized version.

Scurvy is a peculiar state of mal-nutrition, supervening gradually upon the use of a diet deficient in vegetable material, and tending to death, after a longer or shorter interval, if the same course of diet is persevered in. The condition is essentially marked by a dull, leaden pallor of complexion; excessive bodily debility, and mental lethargy; a spontaneous effusion of blood-colored fluid into the various tissues of the body, causing bruise-like patches to appear on the surface; and a livid, spongy, swollen state of the gums, and a great disposition for them to bleed upon the slightest touch.

The destruction to human life caused by scurvy in olden times, on board of ships and in garrisons located under circumstances of difficulty in foreign lands, has been most frightful, while it has affected the working powers of the survivors in a manner unequaled by any other disease.

It is probable, indeed, from the records which have come down to us, that scurvy, either alone or as influencing the severity of accompanying maladies, has caused more premature destruction to human life than any other disorder. There is no more interesting fact in the history of medicine than that this condition which has been looked upon at various times as a plague, as a mysterious infliction of Divine justice, against which man could only strive in vain, or as a disease inseparable from long voyages, should have been proved by evidence of the most satisfactory character to arise from causes in the power of man to prevent, and to be curable by means which every habitable country affords.

Scurvy never occurs when vegetable nutriment is used abundantly, even though the other food be inadequate.

As late as 1854–6 the allied armies of England, France, Turkey and Sardinia suffered terribly with this disease. In the French army alone 23,000 cases of scurvy was reported.

Dr. Hammond states that during our recent war no confirmed scurvy appeared amongst the Federal forces, but a scorbutic taint often manifested itself. He attributed its occurrence to occasional deficiency in the supply of vegetables. In the mountains, in the gold fields of America, when the supply of vegetables has been scant, much suffering and many deaths have been caused by scurvy. It is safe to say that in the States scurvy does not prevail as a disease, and this tenderness and spongy bleeding of the gums that is so often termed scurvy is to be attributed to somnthing else. In all the annals of medicine there is not a case on record of scurvy occurring in any person who has had an adequate supply of fresh, succulent vegetables. I make these statements that no one need, in a country like ours, where the earth is carpeted with green, and the rich verdure of the deep, tangled foliage presents an unbroken mass of vegetable growth, and where gardens and broad fields almost groan under their loads of rich, succulent vegetables, that spring

forth in every variety in obedience to nature's laws and man's industry—I say, in a country like this, no one ever need have the scurvy.

SYMPTOMS.

The first symptom observable in scurvy is a change in the color of the skin, which becomes pale, sallow, or of a greenish tint, according to the variety of natural complexion. There is a peculiar listlessness of the mind, an aversion to exercise, and a condition not so much of anxiety as to the state of health as of indisposition to take any trouble regarding it. Flying pains are felt about the limbs and back, which are generally referred to rheumatism. Up to a certain period the appetite remains good, and digestion continues tolerably perfect; usually there is some constipation. There is no fever, and sleep is obtained readily enough, which is sometimes described as accompanied by dreams in which the luxuries of fruits and vegetables are vividly pictured. [See Dr. Kane's U.S. Grinnell Expedition, page 267.] Gradually reddish, brown-colored spots are observed on the legs and thighs. As the disease advances still larger markings are noticed, so much resembling bruises as often to be taken for violence. Accompanying these external signs there is breathlessness, which the ear applied to the chest fails to discover any cause for. The expression of the countenance is dejected, or it wears an expression of indifference. The lips are pale, and by degrees the face assumes a swollen, or rather bloated, appearance. There is a sickening, feetid odor from the breath. This is only observed as an accompaniment of the swollen state of the gums, and is evidently due to the sloughing which usually occurs in them. So severe is the affection of the gums in many cases that the fleshy

masses are often seen to protrude between the lips. Chewing is impossible, and there is some difficulty even in taking fluid nourishment. It is impossible to describe the fearful appearance presented by the sufferer under these circumstances. His skin is harsh, dry, dirty looking and discolored, with bruise marks, bloated and puffed up in parts by swellings; his manner apathetic The condition appears to a novice and helpless. more irremediable than is seen in almost any other disorder. And yet it is remarkable that these cases, strongly marked as they are, often yield most readily and surely to treatment. The change wrought in a few hours by the administration of lemon juice or vegetables, coupled with general care, is the most extraordinary thing in therapeutics, and of itself furnishes a powerful argument in favor of the cause of scurvy existing in the absence of such food.

In confirmed scurvy the slightest pressure suffices to open the skin and give rise to an ulcer, whose edges are hard, thick and shining, and surface fungoid and bleeding. Its tendency is to increase rapidly in size and to invade the neighboring structures. An intolerable offensive odor is emitted from it. Ulcers such as these will often eat their way into the soft tissues with great rapidity, exposing and invading large vascular trunks, from which dangerous hemorrhage may occur. Sometimes the disorganization of the flesh is sufficiently complete to expose bones and produce caries. The lips and nostrils are occasionally the seat of this ulceration; the patient then presents a ghastly appearance. The exhaustion attendant upon these spreading ulcers is often fatal.

TREATMENT.

From what has already been said it seems hardly

necessary to tell the reader that the treatment of scurvy consists almost entirely in supplying the patient, in the most easily assimilable form, with that material by the deficiency of which his disorder has been produced. "Combined with this," says Dr. Thomas Buzzard, of England, "there will, of course, be needed such a judicious arrangement of general diet as will most easily contribute to his general nutrition. The choice of this will much depend upon the condition of the patient's gums and digestive organs. It is very important that his diet should be varied as much as possible consistent with the avoidance of diarrhea. Fresh lemon juice, in the form of lemonade, should be administered as the ordinary drink ad libitum. The existence of diarrhea should be no reason for withholding this treatment. The looseness of the bowels in scurvy will be uninfluenced by any medical appliance so long as the scorbutic condition of the blood remains uncorrected; and the fresh juice of the lemon has been proved to be more easily digested than any other form of vegetable food."

Professor Maclean speaks highly of the use of Bael fruit in the dysentery which is associated with scurvy. The fruit contains a large quantity of tannin with vegetable mucous, a bitter principle, and a vegetable acid.

According to circumstances, the food may consist besides of good beef tea, with eggs beaten up with wine; or, if the patient can bear it, solid fresh meat, roasted or boiled, mashed potatoes, cabbage, milk, salad, or sauer kraut. The diet will require careful observation; but the great general priciple is to be borne in mind that the anti-scorbutic principle must be received by the patient in one form or other, if his treatment is to be successful.

When diarrhea is persistent, the trisnitrate of bismuth with opium may often be given with great advantage,

the use of fresh lemon juice being, however, continued at the same time. When the gums slough and bleed very much they should be brushed over daily with solid nitrate of silver. An amount of relief is thus afforded which it is difficult to explain.

For the offensive feeter of the breath a solution of chlorate of potash—twenty grains to the ounce of water—may be used to rinse the mouth.

For the hard swellings in the hams and legs, friction with warm soap suds and water several times a day may be employed to great advantage. Scorbutic ulcers may be dressed with lint soaked in lime juice and covered with oiled silk. But all local remedies are but palliatives, and are inert as substitutes for the constitutional treatment of the disorder.

Among the list of vegetables which may be used as preventives of scurvy are oranges, lemons, limes, cabbage, lettuce, potatoes, onions, mustard and cress, dandelion, sorrel, scurvy-grass, the agave Americana (cactus), sauer kraut and grapes. An ounce of lemon juice should be issued daily when vegetables run short; and on shipboard should be begun not later than ten days after the deprivation of vegetables.

There has been a very ingenious form of preserved vegetables prepared by MM. Masson & Chollet, of Paris. It consists of cauliflower, carrot, lettuce, peas, &c., dried and compressed into solid slabs, which are very portable and will keep good for any length of time. The preparation requires soaking for four or five hours in water before use, and then should be cooked very slowly.

"In the Confederate army," Dr. Darby says, "the yam which is generally cultivated throughout the South was found very beneficial. Syrup from the Chinese sugarcane (sorghum), abundantly manufactured during the

last two years of the war, was issued as a ration with decided benefit. When badly made it is liable to fermentation, and deranges the bowels, yet even in this condition it was of great service in scorbutic cases, as was also the extracted juice before it was boiled."

CATARRH, OR COLD—INFLUENZA.

Catarrh consists of acute inflammation of the mucous membrane of some of the air passages.

Influenza, when mild, is termed cold, but I think not properly.

It is an epidemic disorder, attended with great depression, chilliness, running from the eyes and nose, frontal headache, cough, restlessness and fever.

"Influenza arises," says Tanner, "at various periods from some peculiar condition or contamination of the atmosphere. The first visitation of it in this country (England) of which we have a trustworthy description is that of 1510. The poisonous influence, whatever its nature may be, wings its way with greater celerity than the speed of human intercourse, while its progress seems uninfluenced by the seasons of the year; it is said to travel from east to west, and it seldom stays in one district more than six or seven weeks. Some visitations have proved more severe than others; one in 1782, which extended over the whole of Europe, was very fatal." Dr. Southward Smith says, "That when the influenza broke out in London, in 1847, it spread in a single day

over every part of the metropolis, and affected upward of 500,000 persons."

SYMPTOMS.

The chief symptoms of this mysterious affection are, heat and dryness of skin, urgent frontal headache, cryza, sneezing, tenderness of the fauces, hoarseness, harassing cough, shortness of breath, pain in the back and limbs, perverted taste, disorder of the stomach, together with all the signs of nervous and muscular prostration, such as an uncommon degree of languor, debility, and dejection of spirit. Occasionally the danger is much increased by the setting in of acute bronchitis, or even of inflammation of the lungs.

Influenza differs from a common cold in its greater severity, and especially the amount of prostration which it gives rise to.

TREATMENT.

The vapor bath (spirit), or a warm bath, should be taken, and the patient comfortably put to bed with a hot brick or jug of hot water put to his feet; ten grains of Dover's powder should then be administered, and, in eight or ten hours, a saline cathartic.

If prostration be a symptom, a nourishing diet must be allowed, with an occasional "hot brandy toddy." It may become necessary to administer tonics, in which case quinine, tincture of barks or tincture of iron will answer. It may become necessary to repeat the Dover's powder occasionally.

Catarrh is a disease the most common to which the human family is obnoxious. It arises not from mere cold, but from too sudden a change of temperature, or from exposure to wet; or sometimes when we are totally

unable to recognize any particular cause. Dr. Hyde Sutter has suggested that the symptoms of catarrh depend upon a specific animal poison; and that they are attributable either to the material presence of this poison circulating in the blood, or to the irritation which it produces in those organs which are its constituted The arrest of the functions of the skin from elements. exposure to cold throws back into the circulation that which ought to have been eliminated as the cutaneous excretion; and this, either by itself or by ulterior changes which it gives rise to in the blood, induces a condition of blood poisoning—toxamia. So long as the blood is thus contaminated the fever symptoms persist, while its depuration is immediately attended by their abatement.

TREATMENT.

Every one knows, in his own estimation, just how to treat a cold; he has a specific that he has tried and proved a dozen times on himself and others. Some will deplete, some will stimulate, some will feed high, while others will starve; some will take cold draughts, and some will take hot ones, while all are confident that they are right. Now, the solution to the whole affair is, while they are amusing themselves with slops, pills, and a lot of patent drugs that they know no more about than they do about the inhabitants of the moon, the cold gets well—has run its course—and they think they have found a specific in the last article they used, and are ready to give the quack who made the compound a certificate setting forth the merits of his pernicious drug.

An attack of cold can be cut short by the administration of a saline cathartic, and as soon as it has operated give a ten-grain dose of Dover's powder, and repeat it two or three times in the course of the twenty-four hours. In severe cases the spirit vapor bath may be used; the diet may be good and free, with a hot brandy or good whisky toddy at bedtime. Prophylactic treatment is better than the remedial, for it is always better to prevent a disease than it would be to cure. One of the surest preventives of cold that I could recommend, and at the same time a preventive of many other diseases, particularly of the skin, is a cold bath at night, either by a plunge into the bath tub or by a free sponge bath or a shower bath; if the latter is used, however, the water should not be too cold. This, with ordinary care, and a proper attention to clothing, will generally protect you from colds.

Cold, considered in the abstract, is not a serious thing by any means; but when we sum up the long catalogue of diseases that it may cause, and does unquestionably cause, we might well be struck with terror at its approach. If I was compelled to list the diseases caused by and growing out of colds I would attempt to do it by mentioning the exceptions, and believe I could do this with a shorter list than to mention the number it may cause. Hence it does not require a very clear perception to see the necessity of avoiding colds as much as possible. Then keep your feet dry and warm, your body and limbs warmly clothed in winter with suitable clothing; keep the head cool, and avoid as much as possible all transitions from hot to cold, never allowing yourself to be exposed to a current of cold air when you are in a free perspiration. Avoid as much as possible the night air, unless you have on extra clothing; but do not forget a cold bath of some description; do not take it in the morning, as some do, before the circulation has recovered from its sluggishness consequent upon sleep, but take it just before retiring at night; it will soon get to be a luxury and amply repay you for the trouble.

HYDROPHOBIA.

CANINE MADNESS-RABIES.

Dr. Tanner, in his excellent Practice of Medicine, says: "Of the diseases which may arise from inoculation with poisons generated by unhealthy animals, hydrophobia (rabies) is the most distressing. It is, indeed, a fearful malady, not only on account of its almost universal fatality, but also because of the great suffering it gives rise to. Rabies is said to occur spontaneously in the canine, and perhaps in feline races; but it is communicated by inoculation with the saliva to other animals and to man."

SYMPTOMS.

The pathognomonic signs are—cramps of the muscles of the pharynx and thorax, spasmodic action of the diaphragm, a great dread of fluids, difficulty in drinking, restlessness and anxiety, delirium, exhaustion and death.

A person, we will suppose, is bitten by a rabid animal. After an uncertain interval, called the *stage of incubation*, or the *latent period*, he begins to complain of mental uneasiness, chilliness, langour and lassitude; there is restlessness also, loss of appetite, and more or less headache. Sometimes a sensation of numbness, or even

of great soreness in the bitten part, is experienced; but in any case the precursory symptoms are followed, in two or three days, by the confirmed stage of the disease. This commences generally with garrulity, peculiar sighings, nausea and fever, to which succeeds stiffness of the neck, difficulty of breathing and swallowing, a horror of liquids, an alarming sense of suffocation, and an excessive secretion of saliva, causing frequent hawking and spitting. There now set in violent spasmodic convulsions of the whole body, the paroxysms being occasioned especially by the sight of liquids, or the sound of running water, or any attempt at drinking. The spasmodic terror inspired by the sight of water has been well described by Dr. Marcet, who, in relating the history of a case of hydrophobia, says: "On our proposing to him to drink he started up and recovered his breath by deep convulsive inspiration; yet he expressed much regret that he could not drink, as he conceived that the water would give him great relief, his mouth being evidently parched and clammy. On his being urged to try, however, he took up a cup of water in one hand and a teaspoon in the other. The thought of drinking out of the cup appeared to him intolerable, but he seemed determined to drink with a spoon. With an expression of terror, yet with great resolution, he filled the spoon and proceeded to carry it to his lips, but before it reached his mouth his courage forsook him, and he was obliged to desist. He repeatedly renewed the attempt, but with no better success. His arm became rigid and immovable whenever he tried to raise it toward his mouth, and he struggled in vain against this spasmodic resistance. At last, shutting his eyes, and with a kind of convulsive effort, he suddenly threw into his mouth a few drops of the fluid, which he actually swallowed; but at the same

instant he jumped up from his chair and flew to the end of the room, panting for breath, and in a state of indescribable terror."

About the second day the symptoms become more severe. The thirst gets distressing; there is pain at the epigastrium, and flatulence; the countenance is anxious and indicative of despair; the forehead is, perhaps, covered with cold, clammy sweat; and there is, generally, much mental distress, though the intellect remains perfect. As the fatal issue quickly approaches the sense of suffocation becomes more urgent; the surface of the body is so sensitive that a draught of cold air, or the lightest touch, brings on convulsive paroxysms; the senses of hearing and vision get morbidly acute; the saliva is more difficult to expel, though the attempts at spitting are incessant; there is frequent micturition, until at length the terror becomes succeeded by wild delirium, which ends in exhaustion and death.

The stage of incubation in hydrophobia may be said to vary from forty days to eighteen months. Cases have been known where the symptoms set in as early as the eighth day, while others have gone four years.

The disease only lasts a few days—say from two to six—counting from the commencement of the confirmed stage. Only a small number who are bitten by rabid animals have hydrophobia.

TREATMENT.

This must be prophylactic, for the cure of the disease seems, in the present state of medical knowledge, almost hopeless. The wounded part is to be excised as soon as possible after the bite, care being taken to remove every portion touched by the animal's teeth, and to obtain a clean raw surface. The wound is then to be thoroughly

washed by a stream of water long poured over it, and lunar caustic afterward applied. Mr. Youatt prefers the nitrate of silver freely used to every other caustic; and he also recommends that, after its application, the wound should be quickly healed, though many authors advise that it should be kept open by irritating ointments.

In treating the disease itself, I should resort to the inhalation of chloroform, the use of opium, Prussic acid, Indian hemp and ice, though without much hope of success.

STING OF INSECTS.

POISONED WOUNDS.

The stings of insects produce a poisoned wound of the simplest class, the wound being a mere puncture, and the irritation created by the poison not very violent. They generally give rise to no constitutional symptoms, unless the number of the bites or punctures are very great, as in the case of bees, which, when swarming, have been known to cause the death of the person stung.

In the bite of the mosquito or bed-bug there is a slight amount of irritation produced by the saliva of the insect, which is effused into the wound during the process of mastication, the wound being made in the act of feeding.

Diagnosis.—A careful examination of the wound inflicted by the sting of bees, wasps, hornets, etc., will generally exhibit the sting of the insect imbedded in the wound, which, with the history in severe cases, will render the diagnosis easy.

Prognosis.—In numerous injuries by bees or wasps, and especially in those within the mouth and throat, or in the eye, the sting may create such irritation as will be very troublesome. They should not, therefore, be too lightly spoken of, though seldom fatal except in attacks from swarms.

TREATMENT.

The salivary matter injected or allowed to flow into the wound after puncture by an insect, as a spider or bug, being generally acrid or acid in its character, the external application of alkalies, as aqua ammonia, liquor potassæ, salt and water, with subsequent applications of the cold water dressing, nearly always suffice to remove the irritation.

The sting of the bee or wasp presents also the same general facts, though in these insects there is a wound made as the result of an attack, the puncture and the introduction of certain acrid irritating matters secreted by a gland, and contained in a little sac at the base of the sting, being resorted to as a means of offense and defense. The wound made by the sting of the bee, wasp or hornet is usually very small, but is soon surrounded by a certain amount of inflammation, which is indicated by more or less redness, pain, heat and swelling, the latter being generally of an edematous character. When the sting remains in the wound it may be recognized as a fine, black point, as a needle. As it would prove a source of irritation if allowed to remain, it is necessary to withdraw it; this may be done by seizing it cautiously with fine forceps, after which the application of the various alkalies will prove useful, by neutralizing, more or less, the poison introduced.

A popular remedy amongst the common people, and a

good one, too, is the strong juice or a poultice of tobacco. The tobacco chewer is stung by an insect; he "squirts" the juice from between his teeth on the injured part and smears it well over it, or takes the quid from his mouth and binds it on it, and "goes on his way rejoicing," wholly unconscious in a few minutes that any accident has happened him.

When the stings of wasps, hornets, yellow jackets or bees are very numerous, the multiplication of irritation will sometimes produce constitutional disturbance, the amount of injury necessary for this purpose being much less in persons of intemperate than those who are of temperate habits. Indeed, in persons whose blood has become depraved by intemperance the most trifling injuries will sometimes prove fatal; thus there are cases on record where the individual has died from the bite of the common spider.

There is one case, however, in which the sting of a single bee or wasp may prove seriously injurious—that is, when it is inflicted in the fauces, as may happen when the insect is taken into the mouth in a piece of honey comb, the swelling of the fauces rapidly proving fatal by creating ædema of the glottis, and preventing the entrance of air into the trachea. In such case cooling or detergent gargles would be the proper class of local applications; or scarifications of the glottis, or tracheotomy might become requisite if positive strangulation ædema of the glottis supervened.

SNAKE BITES.

There is a large number of serpents capable of causing serious danger to life by their bite. It is not necessary, however, to enter into all the details of these; the cobra di capello and other Asiatic snakes, of course, are not met with here.

The copperhead and other venomous snakes of the United States cause by their bite a series of symptoms which are embraced with but little variation in the following details of the bite of the rattlesnake.

The rattlesnake, it is said, seldom bites man, except in self defense, and generally gives warning of his presence by means of the little apparatus in his tail, from which he derives his name. In making the wound the poison is introduced through a puncture made by a long, sharp tooth in the upper jaw, corresponding in position with the canine tooth in the dog.

This tooth is not firmly attached to the jaw, but is movable, being acted upon by certain muscles. It is also hollow, and contains at its base a little sac, which communicates by means of a duct with the poison gland. When the snake strikes it raises itself in a coil, throws its head back, and then strikes downward, the tooth making a wound from above downward; the contraction of the muscles in erecting the tooth acting upon the sac at its base, and the poison being forced out by the side of the tooth into the wound.

The poison thus introduced may prove rapidly fatal, particularly if the wound has been made directly upon the skin, and not through the clothing. Death follows most rapidly if a small vein or artery is punctured (occurring in certain of the lower animals in as short a time as nine minutes), but when the poison is simply introduced into the areolar tissue of the parts the symptoms are less imminent, and are as follows:

SYMPTOMS.

Shortly after the puncture of the bite a pain of a burning, tingling character is felt, which is particularly violent, and sometimes creates a brief spasm, if one of the cutaneous nerves has been wounded. The part then swells rapidly—an arm that has been bitten becoming double its ordinary size three or four hours after the injury.

The general symptoms which are developed at various periods after the injury are those of depression, which sometimes come on very rapidly, the patient dropping suddenly, as if struck dead. Sometimes, and most commonly, the progress of the case is more deliberate; there are nausea, vomiting, high febrile action, delirium, sense of constriction in various parts of the body, typhoid symptoms, and death, preceded by coma or by convulsions.

TREATMENT.

The indications for the treatment of bites of serpents are two: first, to check or prevent the absorption of the virus; second, to prevent the depression from proceeding to such a point as to prove fatal.

These indications are to be fulfilled by both local and general measures.

The means to be employed in fulfilling the first indication are such as attempt the removal of the poison.

If the patient be in the woods at the time of the accident, and without other means, he may, without hesitation, suck the wound, with a view of extracting the poison, for it has been found that when applied to mucuous surfaces, upon which no abrasion exists, the poison is innoxious. If the wound is situated where it would be possible to cut it out without danger it should be done immediately after the bite. By this means the poison may be removed before it can be taken into the circulation; if the poison is not all removed by this means the hemorrhage provoked may wash out the noxious matter.

Dr. Peake, of Mississippi, has reported a case (in the New Orleans Medical Journal) of rattlesnake bite, in which the patient chewed and swallowed promptly two ounces of tobacco, which did not even nauseate him. The limb swelled very little, and the next day the patient was about and well. I have heard also of another case occurring in one of the counties of Southwest Missouri, where a man was bitten by a rattlesnake. Being alone and at a considerable distance from any settlement where it would be likely that he could get assistance, he looked about him in considerable alarm for something or other that he might take; certain death seemed to stare him in the face. As he felt the burning, tingling pain the unwelcome thought more than once flitted across his brain, how terrible it would be to die here so suddenly and all alone. In his mechanical search, in one of his pockets he found a plug of tobacco, and in his desperation and despair he chewed and swallowed it, juice, substance and all, and, to his infinite delight, he felt the burning, tingling pain cease, and the limb which had already begun to swell ceased to enlarge; he was 30

enabled to proceed on his journey, and was well in a few days.

Under circumstances in which the alcoholic treatment can not be had at once, I would earnestly recommend the chewing and swallowing of at least two ounces of tobacco. It has been recommended to wash the wound with liquor of ammonia or liquor of potassa.

In regard to the alcoholic treatment of these snake wounds, there is a popular idea that if a person bitten by a rattlesnake is able to get drunk he will not die. It is, therefore, by no means uncommon for persons when thus bitten to procure a quart of whisky and drink to extreme intoxication. The evidence in relation to the relief given by the free use of whisky or brandy, judiciously administered, is so strong that few, I think, would be justified in not resorting to it.

Surgeon G. E. Cooper, of the United States Army, reports five cases that came under his and surgeon Getty's care while in Western Texas, all of which were successfully treated with whisky or brandy. The liquor was given at first in tumblerful doses, and continued in half tumblerfuls until the patient fell perfectly drunk; and when the effect of the alcohol was passing off, he was made to drink as long as any whisky would remain on his stomach. Cold water dressing was applied to the wound, and this was all the treatment used.

Dr. Cooper adds: "It was really gratifying to observe the effects of the remedy. No sooner had the patient fallen under the effects of the alcohol than the wounded part, which till then had continued to swell, immediately began to cease swelling, and the muscular jerking—a source of great pain to the sufferer—ceased, and from that moment convalescence began. It seems almost incredible when the amount of liquor required to intoxicate

a bitten person is told. In one case it required a bottle of brandy and a bottle and a half of whisky before any observable effect was produced. In another two bottles of proof Bourbon whisky were used. As soon as the effects of the alcohol were observed a greenish fluid commenced to ooze from the wound. As the oozing commenced the swelling of the part diminished. In fine, I know of no better remedy, nor do I want a more certain one; but it must be used in time, ere the whole integuments covering the bitten limb have become discolored, and the poison produces too much change in the blood and causes such prostration of the nervous system as to render reaction impossible."

This remedy has long been known and used by the hunters of the Rocky Mountains.

The bite of the tarantula, though often referred to with a certain amount of superstition and poetic license as causing the *ecstasy* or dancing epidemic in the fourteenth century, exhibiting many disgraceful scenes in Europe, occasionally is seen to induce evidences of depression differing entirely from the dancing emotions ascribed to it by the people in Italy.

In a case reported by Dr. Heurd, of Texas, in the *New Orleans Medical Journal*, vol. xvi, p. 784, 1859, a patient, aged twenty, in good health, was bitten on his right hand. No swelling or other evidence of inflammation ensued, but the patient was depressed, with shivering, cold, clammy skin, and sunken countenance. After administering morphia, ether, carbonate of ammonia, spirits of ammonia and camphor, without effect, he was bled and obtained complete relief.

The secret of the complete relief obtained lies in the effects produced by the stimulants—the ammonia and camphor—which had to overcome the depression pro-

duced by the wound, and the further lowering of the system by bleeding.

The proper treatment for the bite of the tarantula is alcoholic stimulants, used freely, in connection with a tobacco poultice to the wound. The tobacco poultice is also a valuable auxiliary in the treatment of snake bites.

BURNS.

Burns are changes of vital action created by the application of an unnatural degree of heat. There are two modes in which they may be produced—one by the application of hot solids, the other by hot liquids. The first are strictly classed as *burns*, the latter as *scalds*.

TREATMENT.

The treatment of burns must, of course, vary with the injury. In light, superficial burns, nothing more is necessary than the free application of cold water or ice. Nothing is more natural after burning a finger than to put it into cold water with a view of allaying the pain, and as both cold and moisture have a sedative effect, no better plan of treatment can be pursued.

If the burn is situated on a part so that it may be submerged in a vessel of water, no better treatment can be recommended than to submerge it and allow it to remain for several minutes, and when it is taken out let it be penciled freely with a mixture of equal parts of linseed oil and lime water; this application should be

frequently repeated, so as to give the parts protection from the atmosphere; and when the pain is severe apply the water again.

But if the burn is not situated so that it can be submerged in a vessel of water, cold may be applied by means of a bladder of pounded ice, or partly filled with cold water, or by pouring on cold water; the bladder should not be filled too full of ice so as to be too heavy on the affected part.

In the case of burns where there are blisters and a raw surface exposed, it may be necessary to resort to raw cotton, carded and laid on the part, well saturated with the "carron oil," which is the linseed oil and lime water above mentioned. One object must always be kept in view, *i.e.*, the protection of the parts from the atmospheric air.

In the superficial burns resulting from the accidental explosion of gunpowder, grains of powder unconsumed are often buried in the skin, and leave subsequently a blue point, which disfigures. These may be removed by the application of a solution of corrosive sublimate, five grains to the ounce; this will produce an eruption, the vesicle of which will contain the grain of powder, which will fall off with the dried scales resulting from the vesicle.

In the more severe forms of burns, where there is a disposition toward sloughing, as it is always desirable to favor the early separation of the slough, there is nothing better than the warm water dressing, applied from the very first moment, and continued throughout the treatment as long as heat and moisture can be beneficial. One great recommendation of this dressing is its cleanliness, the constant flow of water washing away the pus before it can be decomposed, thus securing the

purity of the air of the chamber and removing one great source of annoyance in these accidents. The old plan of burying the patient in poultices is objectionable, because they are heavy, liable to become varied, to interfere with cleanliness, to adhere to the diseased surface, and to act as receptacles for the very free discharge of pus which generally ensues upon a burn, and which soon becomes offensive from its decomposition. Patent lint, well wet with warm water, as in the warm water dressing already described, gives moisture and heat in a much neater form, and does not oppress the patient. As soon as the slough seems disposed to separate, it will be useful to stimulate the action of the parts so as to favor the cicatrization, evidences of a want of action being generally present in the granulations of an ulcer which remains after a burn. A good application for this purpose is basilicon ointment, to which a little turpentine has been added: ten drops of spirits turpentine to the ounce of basilicon ointment, well stirred and mixed. "A very important part of the treatment of burns is the management of the ulcer which is left after the separation of the eschar or slough. This is frequently very difficult to heal, and presents the characters of the ordinary irritable ulcer. In order to favor its cicatrization sedatives will often prove useful, such as the cold water dressing, which is very soothing, and by washing away the pus from suppurating burns is kept off one source of irrita-Sometimes, in the ulcerated stage of burns, stimulating applications are demanded in order to excite reparative efforts and overcome the local depression consequent on the injury-such as touching the edge of the ulcer with a stick of nitrate of silver, stimulating the parts and inviting the scabbing process by dusting the surface of the ulcer with finely pulverized calamina or

prepared chalk, and then covering it with a piece of spread cerate and oiled silk, so as to exclude the air."—Smith.

The cicatrices produced by burns are almost always very considerable, often making great deformity. This seems to be wholly unavoidable; the only thing we can do is to watch and prevent adhesions, such as the fingers and toes, and particularly the orifices, such as the mouth, nose, the anus, or the vagina, etc., etc. The depression produced on the general system by burns must be met by stimulus, and later by good diet, etc.

GANGRENE. MORTIFICATION.

By the term mortification is understood the loss of the vital function of a part, or the destruction of its organic texture, either from the action of some direct cause, as heat, cold, &c., or from the application of such means as produce immediate disorganization of the tissues, or from the effects of indirect causes, as the degeneration and destruction which ensue when tissues are deprived of that which is essential to their nutrition. By surgical writers two distinct conditions of parts are recognized under the general term of mortification—one in which the superficial tissues are mainly involved, being named gangrene; while that which also involves the deep-seated parts, and thus induces the entire death of the part, is called sphacelus. The term mortification should, therefore, be regarded as the generic expression,

characterizing in a general way the death of structure; while gangrene and sphacelus indicate the specific extent or degree to which it extends. In gangrene there is usually noted the death of the skin, fascia and muscles; while the additional death of the blood-vessels, nerves, tendons, ligaments and bones constitutes sphacelus.

The dead portion resulting from a circumscribed gangrene is usually spoken of as a "slough;" while the process which results in it is designated as "sloughing."

SYMPTOMS.

In the local symptoms of mortification, as well as in those of inflammation, there may be noted change of color, heat and sensation in the part, together with a modification of secretory action in it as well as in the organs of the general system.

When mortification has commenced, the *color* of the inflammation which generally precedes it is changed from the red of acute, and the more purple tint of chronic inflammation, to a hue which is of a darker character, being first brown and then black.

The temperature, also, either rises to that of the highest grade of inflammation, or else, as is more usual, falls much below the natural standard, until ultimately it reaches the cold of death. The natural sensation of the part is also much modified on the occurrence of mortification, being sometimes very much increased, and at others diminished, until, as in death, the part becomes entirely devoid of sensibility.

The *effusions* or products resulting from mortification are also of a peculiar character, differing materially from those seen in ordinary inflammation or inflammatory action; the formation of lymph or of pus, so constantly

seen in the different degrees of inflammation, being entirely absent in the mortified structure, though it may be present in the adjacent parts when nature is endeavoring to check the progress of the disorder. The formation of serum in mortification is, however, greater than that which accompanies healthy inflammations.

The general symptoms which present themselves in cases of mortification may be described in almost one word as those of depression. There is generally a quick, irritable pulse, not unlike that of some of the low grades of fever. The digestive apparatus is also disordered, the tongue furred, and loss of appetite, with other evidences of a typhoid disorder, such as diarrhea, colliquative sweat, cold skin, &c. As the typhoid symptoms are developed the disorder of the nervous system becomes highly marked, and is shown in the anxiety of countenance, restlessness, insomnia, hiccough, floccilation, stupor and death.

Mortification may be either acute or chronic, humid (moist), or what is designated "dry gangrene."

TREATMENT.

This must consist in thoroughly supporting the patient by the use of stimulants and tonics. For this purpose the tincture of Peruvian bark or quinine must be freely given, in connection with good Port or Sherry wine, and a diet of beef tea. The parts may be washed with a weak solution of sulphate of zinc, and painted around the edges on the healthy skin with tincture of iodine. It has been recommended to place a strip of blister around the limb above the mortified part to prevent its extension. I would not like, however, to recommend a course of this kind. A poultice, warm, composed of flax-seed meal and finely powdered charcoal, may be

placed upon the affected part and changed often. The greatest dependence is to be placed in the proper support of the system, as the prominent symptom of *depression* would readily indicate.

After the part has become dead, and there is a "line of demarcation," it must be removed; a surgical operation will sometimes be necessary for this. If the liquid effusion take place to such an extent as to threaten to do mischief, either by being absorbed or by burrowing into the adjacent cellular tissue, several free incisions should be made through the skin and cellular tissue, in order to facilitate the evacuation of the fluids; those which escape being absorbed by bran or other dry powder and removed at the subsequent dressing. Opium is often of great service in the treatment of this disorder, as it acts in two ways: first, by allaying pain and checking the nervous irritation, thus diminishing the inflammatory action; and second, by checking all other secretions, and yet acting on the skin so as to induce perspiration. The quantity of this must be governed by the circumstances. One grain being an ordinary dose for an adult.

FROST BITE.

This presents, in a modified form, all the symptoms of marked inflammatory action and perversion of the local nutrition in the part affected which have been detailed in connection with inflammation, under the head of gangrene. Frost bite is, in truth, a term only expressive of the fact, as recognized by the ancients, that the gangrenous condition has been induced by cold.

TREATMENT.

With regard to the indications in the treatment of frost bite, it is a repetition of the principles laid down when treating of mortification, that is, to favor the formation of the line of separation and ulceration that the dead parts may be thrown off, while we afterward promote the processes of granulation and cicatrization that the ulcers may be made to heal, a result which it is sometimes difficult to obtain, owing to their unhealthy and irritable character. Until reaction supervenes the treatment of frost bite should be stimulating, or by applications of spirits of camphor, &c.; but after reaction takes place the warm water dressing and solution of sulphate of zinc may be used. Persons who have had their feet frozen while walking in the cold snow with thin boots have avoided all the disagreeable effects by walking into a spring of living water and standing for several minutes, and then removing their boots and having their feet well rubbed dry with a coarse towel.

ULCERATION AND ULCERS.

A degeneration of the products of inflammation and of the tissues affected by it rapidly follows when the inflammatory action is of a certain degree of intensity. This degeneration or loss of vitality being most apt to result in a sore or ulcer, the process which forms it is designated as "ulceration;" and as this process develops an "ulcer," ulcerations and ulcers are not only naturally associated with each other, but are sometimes loosely described as identical. There is, however, this difference: that an ulcer can not be formed until the process of ulceration has previously existed—the one (ulceration) being the cause the other (the ulcer) the effect.

ULCERATION.

The term ulceration is employed to express that vital action by which a solution of continuity is created in any structures of the body, but especially in those known as the soft tissues. Ulceration is established as follows: Inflammatory action being developed is followed by congestion of the vessels of the part, and this congestion, by impairing the supply of blood, impairs the nutrition of the cells. When the inflammatory action goes as far as suppuration, and the vitality of the structure is so much diminished that the cells die and are removed faster than they are reproduced by the organization of the lymph

that is effused, a deficiency of structure results, to which the name of *ulcer* has been applied, while the process is called *ulceration*. In the development of ulceration the lymph or exudation corpuscles which had previously been effused degenerate from two causes—first, from an imperfect circulation in the part affected, and secondly, from the fact that they are softened or disintegrated by contact with the pus already formed, thus creating a semi-fluid mass that gives evidence of fatty degenerations and the liquefaction or moistening and breaking down of tissue cells that characterize it. It is, therefore, easily perceived that the process of ulceration under this view of the subject can never take place in a healthy tissue, and that the parts must first be diseased or inflamed to a greater or less extent before ulceration is established. The old idea that an ulcer was formed by the corroding action of the pus is erroneous, the pus of a healthy ulcer being perfectly bland. The spreading of the ulcer is due to a continuation in the surrounding tissue of the process by which it was originally formed. This is a fact which it will be well for the practitioner to remember in the treatment of ulcers, so that he will not fail to properly brace the system against danger, remembering that ulceration, when once established, is extended, first, by the molecular death of the tissue immediately surrounding the primary ulceration, and secondly, by the detachment and casting off of the cells thus destroyed, their removal being favored by the pus which accompanies the ulcerative action. An examination of any rapidly spreading or sloughing ulcer, when the structure is destroyed faster than it can be removed, will readily show this process, the dead matter which there accumulates being left directly before the eye of the observer as a mass which has been specially designated as a "slough." Of the soft tissues, the skin and areolar tissue are the most liable to ulceration, the tendons, ligaments, blood vessels and nerves resisting this destructive action in a marked degree.

ULCERS.

The chasm in the tissue created by the ulcerative process constitutes the condition designated as an ulcer or sore.

Chaussier defines an ulcer to be "a solution of continuity in any of the soft or hard tissues, produced by a general or local cause, and accompanied by a discharge of pus, ichor, or sanies."

Prof. Henry H. Smith, of Philadelphia, says: "Now, as the process of ulceration exhibits any one stage in the progress of inflammation, and as granulation and cicatrization also constitute portions of the grand process by which nature repairs all solutions of continuity, a much more simple classification of ulcers" (he says this in respect to the classification of ulcers by other writers, which are very complicated) "would be that which would accord with the varieties of inflammation, as acute and chronic, or healthy or unhealthy ulcers, to which might be added the specific ulcer. Under the first class, or the acute or healthy ulcers, I would therefore place all those whose natural tendency is to heal, or in which there might be noted the ordinary processes of healthy inflammation. In the second, or the unhealthy class, I would group all those whose tendency is to spread, or whose progress corresponds with the ordinary steps of unhealthy or chronic inflammatory action. This class would embrace the irritable, sloughing, phagedenic, and indolent ulcers of other writers. In the third might be grouped all such as are dependent on, or modified by, a

specific cause, as the cancerous, syphilitic, scrofulous, varicose, etc."

THE ACUTE OR HEALTHY ULCER.

Ulcers of this class are sometimes alluded to as "simple sores." The edges of these ulcers are characterized by their smooth, even and unindented character, resembling in this respect the ordinary condition of a wound which has been made with a knife in a healthy structure, the skin, up to the very margin of the sore, retaining most of its characteristics, and not presenting signs of inflammatory swelling.

When in the healthy ulcer the process of cicatrization has commenced, these edges also often exhibit little processes, or extensions of cuticle over the granulations immediately within them. The granulations are of a bright, clear, red color, smooth, shining, and covered more or less with true pus. They are also somewhat conical or pointed in their shape, do not rise above the level of the adjacent surface, and do not bleed unless roughly touched.

The discharge is a cream-like pus of a whitish-yellow color, which may readily be wiped off the skin adjacent to the sore so as to leave no trace of his presence—that is, it is unirritating to the skin. The seat of this ulcer may be in any portion of the body; and the patients who labor under it are usually the young and middle-aged, who possess good constitutions.

TREATMENT.

The treatment of this ulcer is very simple, the natural tendency of the sore being to heal by the process of granulation and cicatrization. All that is necessary is, for the dresser to avoid officious interference with the process of nature; thus, in cleansing the sore let him be careful not to wash the pus from off the granulations, though he may thoroughly cleanse the skin adjacent to them.

Let him protect the ulcer from any violence or friction, if it is so situated as to be exposed, by splints, bandage, or by putting the patient to bed, or by approximating the edges together by adhesive plaster.

A degree of heat and moisture must be maintained, which can best be done by the warm water dressing, which consists of wringing a linen cloth out of warm water and applying it to the sore. Or it may be done by spreading simple cerate on lint and applying it by means of a bandage or something else to retain it in its place.

Poultices were formerly used for this purpose, but there are many objections to them; their weight, their liability to become rancid, or the chemical changes wrought in them often make them injurious.

The warm water dressing is now in universal use; it is safe, handy and clean. When in the treatment of the acute or healthy ulcer the reparative process begins to flag—that is, when the granulations become paler, the pus less thick, and the cicatrization does not evidently advance—it will prove useful to stimulate the surface by touching the margin of the sore very lightly with a stick of nitrate of silver, so as to form a white deposit; and this stimulus may be repeated every twenty-four or forty eight hours, until the reparative action again advances.

It may sometimes be necessary to paint the granulations near the edge of the ulcer with a camel's hair pencil which has been dipped in a solution of nitrate of silver—ten grains to the ounce of water—or a solution of the same strength of sulphate of zinc.

Throughout the treatment of this ulcer (if it is one of any magnitude) attention should be paid to the digestive organs, so that proper nourishment may be had and the patient guarded against constipation.

THE UNHEALTHY OR CHRONIC ULCER.

"Under this class," says Dr. Smith, "I would group all ulcers in which may be traced the ordinary evidences of unhealthy or chronic inflammatory action—that is, ulcers in which color, heat, pain and swelling are highly developed, as well as those in which one or more of these signs of inflammation are deficient, or only present in a modified degree." Of those in which the heat, pain and swelling are marked symptoms, we have the "Irritable," the "Sloughing," and the "Phagedenic," as well as the "Fungus" ulcers of the older surgeons, while the "Indolent" variety exhibits all the evidences of chronic inflammatory action, with the failure of the reparative process of acute inflammation to heal the chasm developed by the original source of the ulceration. In the class of unhealthy or chronic ulcers is, therefore, placed two varieties, the one being marked by excessive inflammatory action, the other by a deficiency of vital force.

ULCERS DUE TO ACTIVE, UNHEALTHY INFLAM-MATION.

These ulcers are known as the irritating and sloughing ulcers. The edges of the skin near the irritable ulcer are usually shining, red, hot, painful and swollen, giving evidence of high inflammatory action, while the margin is serrated or indented in consequence of the burrowing of the pus and the absence of the layer of lymph; the granulations may be raised above the skin, bleeding on

the slightest touch. The pus, or rather ichor, from this variety of ulcer is thin, acrid and irritating, of a pinkish yellow from the admixture of blood, or of a light brown, like pus—blood and water mixed together. Wherever the discharge remains it is disposed to evaporate and form crusts or scales, sometimes drying in patches on the surface of the sore. The irritable ulcer is generally seen on the legs below the knee.

TREATMENT.

The warm water dressing must be applied here as directed in the acute ulcer. The patient had better be put to bed, and his leg a little elevated, so as to drain the blood from it and diminish the local congestion. If the pain is severe, add one drachm of opium to half a pint of the warm water, and renew it by wetting the cloth or lint in it every hour or two. If the whole limb is swollen and painful, it may be wet with cold water to which laudanum, in the proportion of one drachm to the half pint, has been added; or cold water may be poured upon it from the spout of a tea kettle held a foot or two above the limb; but the sore must be dressed with warm water dressing.

When the unhealthy ulcer takes on a sloughing or phagedenic character, its progress may be arrested by the application of lint wet with very dilute nitric acid, of the strength of one drop of the acid to the ounce of water. The healing of this ulcer, after it has ceased to be irritable, will often be expedited by the application of lint soaked in mucilage—flax seed or gum arabic.

It is best at the commencement to give a moderate cathartic. For this purpose give three of the U. S. Dispensatory compound cathartic pills. After their action, if the ulcer is painful, ten grains of Dover's powder should be given every night at bed time, and the body bathed once a day with the tepid alkaline sponge bath; this, with the Dover's powders, will keep the skin in good condition. The food must be carefully selected, and given in such quantities as will preserve good digestion.

INDOLENT ULCERS.

When the process of repair has been arrested in the simple healthy ulcer, or in one of the irritable, sloughing, or phagedenic class, the sore may heal to a certain point, and then remain unhealed for a period which may vary from thirty days to as many years. This kind of sore is designated as chronic or indolent ulcer, and the second species of the unhealthy class. It is generally caused by neglecting the simple sore.

Its seat, like the other class, is the leg below the knee. The pain is trifling, the chief inconvenience being the enlarged, heavy state of the limb.

TREATMENT.

The edges of this class of ulcers will be found to be thick and hard. These must be got rid of. It is the custom of some to pare them off with a scalpel or other sharp instrument; they will not bleed much. When the everted edges are cut away paint them with a solution of nitrate of silver (ten grains to the ounce); this will cause a new inflammatory action to arise, and the part to take on the form of a healthy ulcer. Another plan is to draw the edges together, or as nearly so as possible, with adhesive straps, and then place a bandage, beginning at the toes, over it, making considerable pressure; wet the bandage each morning, or oftener, with cold. water, so as to promote evaporation from the limb.

Dr. Smith's plan is to apply first a poultice made of powdered white oak bark at night, as hot as the patient can bear, and have the limb thoroughly washed and shaved next morning. Then he recommends to melt together four parts of beeswax and one part of Venice turpentine, and when it is cooling to fill the ulcer with it, the ulcer having first been cleaned and dried. Then, after the wax has dried, he fastens it in its place by a strip or two of adhesive plaster. He then cuts a number of strips of adhesive plaster and applies them, commencing a little below the sore, and lapping each one about one-third on the former one until he gets an inch and a half above the sore; these he draws tightly, making considerable pressure on the parts. On the third day he removes the strips, cleans the pus from the plaster, and applies them (or others) again. On the sixth or ninth day he removes the strips, and plaster too, and cleans the sore; he then applies the dressing as before, and continues this course until it becomes a simple, healthy ulcer.

I have cured some very old and obstinate ulcers by the warm water dressing and bandages, commencing at the toes and bandaging to the knee, and the painting occasionally with the solution of nitrate of silver.

Salves are generally resorted to in domestic practice by kind old ladies; and a common salve, to which red precipitate—about twenty grains to the ounce—has been added, does sometimes cure an ulcer, but it will oftener do harm. If they are applicable at all, it is to this class of ulcers; when they become old and indolent, and want life, they need an irritant; and ointments, I don't care how carefully they are made, are scarcely ever free from rancidity, and will generally irritate. Much harm is often done to irritable or sloughing sores by the application of salve.

BOIL FURUNCLE.

The furuncle (from *furo* to rage), or boil of common language, is a circumscribed inflammation of the *derm* or the areolar tissue, which is usually attended by violent inflammatory action, followed by the death of the circumscribed portion of the skin which is over it and by the separation of the central portion from the adjacent parts in the form of a "slough," or *core*, as it is usually termed.

SYMPTOMS.

The symptoms and general appearance of a boil are so well understood by every one that it would scarcely seem necessary here to repeat them. The earliest sign of its presence will be found in a circumscribed redness, attended with considerable burning and a violent throbbing, pulsatile pain, after which swelling occurs, the part being raised more or less with a firm, hardened base. It soon presents a soft point in the center where pus is quickly to be seen like a small pimple, which soon discharges; but the boil, although pain diminishes, still swells, and finally the skin bursts and a thick, vellow pus escapes, leaving in the center a slough called the "core." After a few hours or days this core escapes and the skin heals rapidly. Generally, after the lapse of a few days or weeks, another boil is apt to be located in the immediate neighborhood of the first. This also runs its course and may be followed by others.

TREATMENT.

As boils are usually found in those who are free livers and whose digestion and secretions are somewhat disordered, the best plan of treatment is to administer a full dose of blue pill at night and follow it next morning by a full dose of citratized magnesia or Seidlitz powders, repeating the cathartic in twelve hours if its action be not quite free. The local treatment should consist in the application of heat and moisture by means of the warm water dressing, or hot flax seed meal or weak lye and wheat bran poultices. When pus is formed (and not before) the skin may be punctured and the matter evacuated, but without disturbing the core, which should be left to be thrown off by nature. Great pain and suffering is often made by "opening" the boil too soon—that is, before the pus is formed. This should be avoided. To prevent a reproduction of the complaint the diet should be chiefly vegetable and the patient should take a dose of salts once or twice a week.

I do not subscribe to the old saying that each boil is worth five dollars to the patient any more than I would that each inflammation of the lungs is worth an amount to the patient. A boil is simply a symptom—one that shows there is a morbid or abnormal condition of the system present. Then its pecuniary value is no more than any other symptom.

CARBUNCLE ANTHRAX.

FURUNEULUS MALIGNUS.

This is a malignant form of boil—a gangrenous form of inflammation in the areolar tissue.

SYMPTOMS.

Pain, fullness and irritation is felt in the part, followed by great heat and an intense aching pain; vessication of the cuticle is seen in the part, accompanied by great burning. A circumscribed, hard, deep-seated swelling can be felt. This soon assumes a dark purple or livid color in its center, immediately after which numerous vessicated points appear and give exit to a brownish sanies (fluid). Shortly after this a little brown or black slough shows itself, which seems, from its color and from its resemblance to the condition created by the application of a burning coal, to have given rise to the name of the complaint.

As the disorder progresses the various vessicated points become the seat of numerous small ulcers through which the dead areolar tissue becomes a soft putaceous mass, which is ultimately thrown off if the patient sustains the irritation, thus leaving a wide but superficial ulcer, which shows but little disposition to heal. Soon after the appearance of the local disorder there is a chill, followed by fever, and this is soon succeeded by typhoid symptoms, inability to sleep, restlessness and

headache, or even delirium. There is also difficulty of breathing, colliquative sweats, fainting, subsultus tendinum and hiccough, all of which may terminate in a return to health, but which in old persons, and especially when the disorder is seated near the head, frequently ends in death.

TREATMENT.

The late Dr. Physick, of Philadelphia, suggested as a treatment especially applicable to those cases in which there is an evident mortification of the subcutaneous areolar tissue, a crucial (cross) incision entirely through the skin, deep into the sloughing tissue; after which a stick of caustic potassa should be rubbed throughout the line of the cut across the "sore" and all over the surface of the livid skin until it becomes black and is converted into an eschar. After this the part must be immediately wet with sweet oil or vinegar in order to neutralize the caustic, while the surrounding skin, especially that over which the discharge will flow, must be painted well with sweet oil. This application of the caustic, if thoroughly made, destroys all the extreme pain of the disease and gives the patient prompt relief. When carbuncle has been thus cauterized it should be covered with a fermenting or yeast and corn-meal poultice, which should be renewed every four hours. As soon as the parts show a disposition to throw off the dead mass the flax seed poultice or warm water dressing may be substituted. This also must be changed every four hours. After the separation of the slough the ulcer should be treated on the general principles of healthy ulcers. It may require six or eight weeks to heal it. In the commencement of the case, as in boil, a full dose of blue mass may be given at night, say fifteen grains, and followed next morning by a dose of Seidlitz powders or salts, after which the patient may use Dover's powders in doses sufficiently large to relieve pain. Sometimes two, three or even four grains of opium in twenty-four hours may be demanded. At the same time the patient's strength must be supported by the use of quinine or tincture of barks, generous wine and a good, nutritious and easily digested diet. As the case advances alcoholic stimulants will become necessary. The same plan of treatment must be observed in this as recommended in mortification.

ABSCESS.

This term is applied by the profession to a circumscribed collection of pus in any of the tissues or organs of the body.

CAUSE.

The proximate cause of an abscess is almost invariably a pre-existing inflammation. An abscess may occur in any of the tissues or organs of the body. There are two varieties, the *acute* and *chronic*.

SYMPTOMS OF ACUTE ABSCESS.

"The symptoms of an acute abscess," says Professor Smith, of Pennsylvania College, Philadelphia, "may be readily understood from the preceding brief account of its progress. When the inflammatory action is about to result in suppuration, the part becomes redder, hotter and more painful and swollen than it was before; then as

pus forms the constitutional symptoms become more marked, the formation of the pus, or the establishment of suppuration, being often indicated by a chill or rigor, and by more or less marked development of the constitutional symptoms of inflammation. As the pus collects the local signs of the presence of liquid become apparent and fluctuation may be recognized." The tumor also becomes soft and will yield readily to pressure over the pus, but will not pit, but fills immediately on your taking off the pressure. When fluctuation is present and the evidence of inflammation has been noted, the diagnosis of acute abscess is readily made.

TREATMENT OF ACUTE ABSCESS.

The natural tendency of every acute abscess is to evacuate itself on the side on which the tissues yield most readily. In the treatment of acute abscess it will be found necessary if there be a foreign substance, such as a splinter, leaden ball or anything else in it, to remove it if possible, after which such means as have been already described for local inflammation should be used—warm water dressing, &c.; but if the mechanical removal of the cause can not be accomplished the application of heat and moisture must be made, to assist the relaxation of tissue and the natural tendency of the abscess to point. The neatest and best way to do this is by the warm water dressing. When pus has formed it becomes necessary to have it evacuated. This, in most cases, can best be done by cutting down on it. This plan is almost always preferable in acute abscess, as it will heal more readily. Another mode or plan is to open them with caustic, or by frequently applying a stick of nitrate of silver to the points desired to be opened, and still another way by a seton. The only reason, however, for

those plans is the danger of cutting an artery or some important vessel. This need never be feared if the operator is only careful and will only cut through the skin into the abscess. The skin is always sufficiently raised to prevent any danger from a careful operation. A bistoury or abscess lancet, or any other sharp instrument, may be used. Hold the instrument like a pen, between the fingers and thumb, while with the left hand the skin at the point of incision is made quite tense, then carefully plunge the instrument only deep enough to pass through the skin into the cavity of the abscess, by a forward and inward motion, and an opening sufficiently large to allow a free exit for the pus will be safely made. The subsequent flow of the contents of the abscess may be then left to nature, or its progress aided by gentle pressure, and the subsequent applications of heat and moisture.

The general treatment of an acute abscess will, of course, vary with the stage. Before pus is fully formed antiphlogistic measures to some extent should be resorted to. Purgatives may be necessary in order to diminish inflammatory action, but where, after an abscess has been opened, there is considerable flow of pus, or one which threatens to exhaust the patient's strength, the general treatment resolves itself into such measures as will support the powers of the system.

COLD OR CHRONIC ABSCESS.

This consists in the collection of pus in a circumscribed cavity. It resembles the acute; only the grade of inflammation is so slight that the disorder may pass unnoticed for a long time.

SYMPTOMS.

The symptoms of chronic abscess are a dull, heavy pain with a moderate amount of congestion in the parts, after which a tumor of varied size shows itself. This may not happen, though, for many months. This tumor is broad, and has a hard base, without heat or redness. As this augments in size the skin or tissue covering it is rendered thinner and softer. The abscess develops slowly; the pus collects gradually; it may be many weeks almost without change. The pus of a *cold* abscess is usually imperfectly formed, is greenish, thin and watery, and "has a bad smell."

TREATMENT.

When the amount of pus in a cold abscess is large it may, if its contents are evacuated at once, give rise to a set of symptoms of a typhoid character. A large cold abscess should not, therefore, be emptied at any one period, but should be discharged carefully and by degrees, the possibility of the entrance of atmospheric air into its cavity being well guarded against. The entrance of the atmosphere into the cavity of a cold abscess is often most dangerous to life. When air finds an entrance into the cavity of a cold abscess a change is perceived in the odor given off by its pus. A train of constitutional symptoms may be observed similar to those produced by the formation of pus in the blood. The efforts of nature to overcome the depression consequent on this state of affairs produces a condition of the patient's system which is known under the name of hectic fever. It is necessary to delay the opening of cold abscess as long as possible without allowing it to open itself; but if from the tenseness of the skin it is found that it will soon open, it is always better then to puncture it. When the pus has been removed the sides of the abscess should be put together so as to bring its walls in contact; apply a compress and bandages to support them in this position and then carry out a plan of general invigorating treatment.

A good plan to open one of these abscesses is to introduce the bistoury or lancet at some little distance from the cavity and pass it horizontally under the skin into the abscess. Bonnet, of Lyons, recommends that the limb then be placed in a large vessel of warm water, where, of course, the air can not get into it. In a very large abscess one-third or one-half of its contents is enough to evacuate at a time. Should the air enter the cavity of the abscess in spite of all those precautions, and the consequent typhoid symptoms be developed, the abscess should at once be freely laid open, so as to permit the pus to have an easy exit, after which its cavity should be thoroughly washed out by injecting some solution calculated to neutralize the putrefactive process. This should be made by adding an ounce of liq. sodæ chlorinat to six fluid ounces of water, and may be injected three times a day. In this condition all the powers we possess should be put forth in an invigorating constitutional treatment. The best tonics, the best stimulants and the best nutriment should be carefully used; the digestive organs must be cared for and not over taxed. We must do all we can to improve or sustain the system or our patient will sink under hectic fever. If HECTIC FEVER set in the treatment must consist as above—in supporting the system. Tincture of iron, other tonics, stimulants, with the best nutriment, such as beef tea, milk, etc., must be resorted to.

WHITE SWELLING.

"In a peculiar form of arthritis met with in the knee joint," says Dr. Smith, "and designated as white swelling, we find the symptoms are as follows: The patient notices a certain degree of tenderness about the articulation, which, gradually developing with the disorder, often causes marked tumefaction, and pain of a varied degree and duration, this being followed by stiffness of the joint and more or less loss of its proper motions. When the swollen joint is now handled no sense of fluctuation is communicated to the touch, but a peculiar sensation is perceived which indicates the presence of a thick gelatinous substance beneath the skin, this substance presenting a soft, pultaceous mass, which yields somewhat to pressure, but does not permit the skin to pit, as in ædema, unless accompanied by inflammation of the integuments." The tumefied joint is usually whitish or pearlish in its color, and there is no enlargement of the superficial vessels, with no pinkish hue, as in the tumefaction of joints due to acute arthritis, rheumatoid arthritis, or gout.

The disease progressing, the parts become hot, the skin distended and shining, and then a slight vascular congestion may be noticed, which gives a pinkish or purplish tinge to the tumor. By and by ulcerations communicating with the joint are developed in the skin, and through these there is discharged a thin, bloody

ichor; symptoms of hectic are now developed, if not previously present, and the patient becomes prostrated by colliquative sweats and diarrhea, presenting not unfrequently thoracic disease, till finally death closes the scene. Or, a more favorable change taking place, the patient survives the exhaustion of the suppuration and gets well, with anchylosis of the joint in a deformed position.

TREATMENT.

The surface should be often painted with tincture of iodine, which must be repeated two or three times a day. Rest to the joint must be had, but it is not proper to confine the patient to bed, nor even in-doors, as open air and exercise is a necessity; a splint must therefore be prepared, so that the limb can be comfortably confined in rest while the patient takes out-door exercise.

Attention must mainly be directed to his general health, and all the means usually recommended for sustaining and building up resorted to. Iodide of potassium must be given in from two to four grain doses three times a day, well diluted in water.

His bowels must be kept open with injections; and if diarrhea sets in it must be checked by grain doses of opium. If he sweats profusely, he must have his body washed with water as warm as it can be borne, and take twice a day ten or twelve drops of elixir of vitriol in half a glass of water.

CONVULSIONS.

It must be kept in mind that convulsion is a symptom, not a disease. Yet it is the most striking individual symptom of the series in which it occurs; indeed, it is sometimes the only one about which we have much definite knowledge.

Convulsions occur in association with obvious organic changes in the nervous system of the most varied kinds, such as cerebral hemorrhage, intra-cranial tumors, and softening of the brain. They follow injuries on the head, either immediately or remotely, for they are due either to the direct effects of the accident, or to the secondary effects which, in time, the principle lesion may produce. They occur in a healthy but parturient woman after severe losses of blood, and in an unsound man because his diseased kidneys do not allow the waste of the tissue to pass from the blood, and thus the body poisons itself. Some believe that convulsions may be the result of mere passing disturbances in parts of the body remote from the brain, such as may be provoked in the nervous system by the irritation of the coming through of a tooth, or by worms in the digestive canal.

Finally, there are a large number of convulsive seizures which, for want of knowledge—even of the approximative knowledge we have of such cases of fits as are given above—we are obliged to dismiss the supposed definite

groups of clinical symptoms with the title of epilepsy, or epileptiform.

Whatever else happens it is in all events clear that in every convulsive attack nerve tissue suffers; and the practical point, when we are called to a man in a fit, is to learn, if not why, at least how, this is suffering. Whether it be itself primarily in fault, or whether it suffers from want of blood, is poisoned by bad blood, or torn by cerebral hemorrhage, there can be but little doubt that it is enfeebled.

CONVULSIONS IN CHILDREN.

Convulsive attacks in children must, of course, differ from one another just as they do in adults. There is nothing pathologically different in the convulsions of adults and those of children.

Much slighter causes will produce convulsions in children than adults. Our spinal system, at least those parts of it of which the actions are involuntary, is more nearly perfect at birth; the brain, the motor and sensory centres for the limbs, and all the muscles we use involuntarily, require education. The life of the infant's brain is vegetal rather than animal, and so is at first the life of its voluntary muscles. The actual physical development of nervous organs by growth and junction of cells and fibres is not improbably a factor in the formation of mind out of brain. The infant can have but a rudimentary delirium, as its mind is but slightly developed. In the language of West, "In a large proportion of cases of convulsions in the infant, convulsion answers to delirium in the adult." Trousseau says that there are children who have convulsions as easily as some have delirium, or even dreams. So much for the process of development,

which gives rise to what is sometimes called the "excitability" of the child's nervous system. Disease finds the nervous system in early life in active change, although in a healthy, progressive one.

There are more cases of convulsions in children of which our ignorance of the cause is more profound than there are in adults. Especially, it is believed, the cases are more frequent in which a healthy, or nearly healthy, nervous system gives way to some slight external irritation. Hence the use of the words "eclampsia" and "essential" in speaking of the convulsions of infancy. There is a great unanimity as to the complete agreement of the phenomena of the paroxysms of epilepsy with those of convulsive attacks of young children, and it is at least premature to say that convulsive attacks at two periods of life differ as to their immediate causes, when we know nothing certain of the causes of fits at any age. "Convulsions may occur at any age," observes Dr. J. Hughlings Jackson, "and this remark applies to any kind of convulsive movement; but the tendency to convulsions gradually decreases with the increasing years." In proportion as the brain increases in size, and its structure acquires perfection, and its higher functions become displayed, convulsions grow less and less frequent. If we find the patient to be in general good health, so far as we can tell, we should try to find out if there were no such temporary cause for the fit as over-eating or fright, and we should search for evidence of local irritation, such as the cutting through of a tooth, or worms may not unfrequently produce them; also pins may be arranged in such a manner that by pricking the child spasms may be produced. But we more commonly find disease of some kind present, such as intermittent fever, whooping cough, scarlatina, or some other disease. I can not think, for my part, that over-eating, the irritation of worms, &c., or any such local disturbance, are likely to bring on a fit in a child whose nervous system is really healthy. And when we find, after getting rid of such causes, that the fits leave and the child gets into apparent good health, we should, I submit, bear in mind that a feeble, or we may call it an "excitable," nervous system has to be reared, and may again fail when it is next tried, although in a very different way. But if, from the child's age and other considerations, these local causes were not probable, and especially if the child had had slight seizures before, we should fear, although we should not be certain, that the attack would be followed by others, which for want of more knowledge might be called "essential," or, as some would call them, epileptic. When technical terms are allowed to govern our thoughts it is very important how we name a series of symptoms. One thing is perfectly certain, that epileptic fits in adults frequently date from convulsions in infancy.

TREATMENT.

"It would not be correct, as I have remarked," observes Dr. Jackson, "to speak of any truly rational treatment of a single symptom which means things very different. Our treatment is nearly altogether empirical. I, of course, exclude altogether from present consideration cases in which convulsions occur in such diseases as scarlet fever, meningitis, etc. Even an empirical treatment of convulsions would not be justifiable in these instances. I have no doubt whatever in time we shall cease to consider any sort or degree of convulsion as in any way a separate thing for diagnosis, prognosis or treatment. Our thoughts on treatment would go hand in hand with our investigations, and of course principles of treatment apply to

convulsions of all sorts, from rolling of the eyes to complete seizure. If we find the child in a fit we should see that every part of its dress is loosened, that it has a plentiful supply of pure air, and we should direct that it be laid down and kept quiet. If we find that the fit came on after eating, we should give an emetic of ipecac—to a child one year old one or two grains in a teaspoonful of warm water. If we find a gum swollen or tense, we might properly use the lancet and cut it. We should inquire after the state of the child's bowels; if they are costive we should give a purgative. But none of these things must be done as a matter of routine. The presence of diarrhea, especially with griping and passing nothing but mucous, may show that there is irritating matter in the intestinal canal, and it is then proper to give a dose of castor oil, injections of warm water or gruel—an ounce to a child one year old will be found serviceable to facilitate an action of the bowels. Warm baths should be used when there is no great heat of the skin and no thoracic complications. The child may be put in a bath with the temperature at 95 to 100 ° Fahr, from five to ten minutes. Under any circumstances the feet and legs may be immersed in hot water, then mustard plasters applied to the calves of the legs for five or ten minutes. If the patient has high fever, as is often the case, the body should be sponged with tepid alkaline water often and cold applied to the head. It would not be proper to immerse his body in hot water if there is great fever." When we have done all that immediate investigation prompts—when we have attended to the bowels, lanced the gums, ordered proper food, the convulsions may persist, and may even increase in number, in spite of all our care, and we are thus urged to do something more. It is then that this sort of convulsion has its chief importance. There is in attacks of convulsions a tendency to (1) death by exhaustion, from the frequency of the fits and want of sleep; (2) death from asphyxia (non-conversion of venous blood in the lungs into arterial blood—suspended animation); suddenly from the prolonged fixing of the chest walls, and gradually from slow congestion of the lungs. The latter is rather a way of dying than a cause of death. Adults die from convulsive seizures in each of those two ways.

"If the child were much exhausted by frequent fits, or if it were weak from the first, had long had diarrhea," says Dr. Jackson, "I would look most carefully to its support. I should prescribe beef tea or juice of meat in abundance. Nor would I hesitate to give stimulants. The object in treatment of disordered function of the brain is to produce sleep. To accomplish this we should give support liberally, and if this fail, stimulants freely. If the beef tea or juice of meat were vomited, give milk with a little ice and inject the tea or the juice. Of course I speak of fits when there is no general fever and no sign of inflammation of the membranes. A thin, delicate child should be kept warm. As an anti-spasmodic it may be desirable to inject thirty drops of tincture of assafetida in an ounce of warm milk for a child from six months to one year old. A mixture containing hyoscyamus, two or three drops for the age of six weeks, may be given with peppermint water. The great object, however, is, I repeat, to produce sleep." I would prefer to accomplish the object without wine-by nutrients, if possible; but to a weak child I would not hesitate to give the wine, as we have the very best authority there is for it. Should nutrients and stimulants fail, I would not hesitate to give opiates. In a case where there was great excitement with little vigor I should not give narcotics.

Narcotics should not be used oftener than once in twelve hours, and not then when there is great febrile excitement. A decided dose should be given—a quarter of a grain of Dover's powder under the age of three months, half a grain to one year, and a grain to one year and a half or two years. Inhalations of chloroform have been recommended by some of the best physicians of the age when convulsions are not obviously due to organic disease of the brain. Convulsion is a sign of enfeeblement of part of the nervous system. If spasms become chronic, bromide of potassium is the remedy—a quarter of a grain under six weeks, half a grain under three months, a grain above that age, and a grain additional for every year.

EPILEPSY-FITS.

This is a chronic disease, of which the characteristic symptom is a sudden trouble or loss of consciousness, this change being occasional and temporary, sometimes unattended by any evident muscular contraction, sometimes accompanied by partial spasm, and sometimes by general convulsion.

The two elements probably present in every case of epilepsy are, diminution of intelligence and excess of muscular contraction; and these two elements may exist in almost every variety of combination and be developed to any degree of intensity.

CAUSES.

Dr. Reynolds has found hereditary taint to exist in rather less than one-third of the cases that have come

under his observation; and he states that he has been careful on this point.

Besides this, there are various forms of nervous malady, and other abnormal conditions of the sexual organs, or unnatural circumstances attending upon their exercise.

Epilepsy commences in a majority of cases between the ages of ten and twenty years, or about the period of second dentition or puberty. Fright, grief, over work, eccentric irritation, dentition, indigestion, venereal excesses, blows on the head, &c., are the principal causes that have been assigned for epilepsy.

SYMPTOMS.

"In the most characteristic cases of epilepsy," observes Dr. Reynolds, "there is an entire loss of consciousness, in conjunction with a peculiar series of involuntary muscular movements; but on the one side of these typical cases we see epileptics in whom the loss of consciousness is alone obvious, and on the other individuals exhibiting highly marked spasmodic phenomena, and only very slight, or even imperceptible, obscuration of the mind."

There is a wide range in the severity of attacks of epilepsy. Thus the patient may only have a sudden, temporary, but absolute arrest of both perception and volition. The individual so attacked loses consciousness for two, three, or more seconds, and may, after that or a longer period, resume his sentence or employment perfectly unaware that anything abnormal has happened.

These seizures are often regarded as "faintings," and are described by patients as "blanks," "forgets," "faints," "sensations," "absences," "darknesses," etc. Sometimes there may be only a drawing of the mouth, partial turning of the head to one side, or some movement as if swallowing, etc., or there may be slight momentary

rigidity of the whole body. Sometimes the patient does some curious things, such as to stoop down to peep under a sofa, lie down and pull off his cravat, jump from his chair and walk quickly half way across the room; but in any or all of these attempts to do something he is suddenly arrested by the loss of consciousness, which is often absolute. The loss of consciousness is generally sudden and complete, the patient falls down in a moment, with or without warning; but, even when the warning occurs, so that he may change his position or call attention to his wants, habitually the passage from consciousness to unconsciousness is abrupt and the loss absolute.

The tonic spasm of the muscles is peculiar. The patient usually appears to be straining round toward one side, as if striving to look over and behind one of his shoulders. The eye-balls, the head, the arms and the trunk turn and twist round so as to give the impression above mentioned. Respiration is arrested, the patient appearing just like a man forcibly holding his breath. In a few cases the breathing proceeds without actual interruption, but its movements are diminished in force.

The pulse, as felt at the wrist, is usually small. The pupils of the eye are dilated. The breathing later in the attack becomes laborious, with a gurgling and foaming. The face, from being pale at first, becomes dark. The attack is followed by sleep.

TREATMENT.

For the treatment of epilepsy sedatives have been employed, and with success. It would be useless to attempt any estimate of the relative value of many of these agents, for there are no data sufficient for the purpose. Opium or morphia, hyoscyamus, stramonium, belladonna, cannabis Indica, atropine, chloroform, and other medi-

cines, have been employed with good effect in some cases, but without any perceivable effect in others; and hitherto no principle has been evolved from either their failure or success. Opium, or some preparation of morphia, has been of service when the patient was restless at night, and was obviously suffering from loss of rest.

Chloroform has delayed attacks while the patient was actually under its influence, but has failed to prevent their subsequent recurrence. More recently bromide of potassium has gained great favor in the treatment of epilepsy; in fact, it is well established now on the very best authority that it will always help, and really most generally cure the complaint. This is indeed a valuable acquisition to medical science. The disease has long been considered as almost incurable. Few cases indeed have ever been cured by the ordinary means that have so long been employed. But now we have a remedy (not a specific) in the bromide of potassium, upon which we may rely most confidently.

Dr. Reynolds, in his excellent "System of Medicine," observes, "Bromide of potassium is one medicine which has, so far as I know, proved of real service in the treatment of epilepsy." Undoubtedly it is sedative in its action; it lessens spasmodic movements of almost every kind, and sometimes insures sleep when vegetable sedatives, and among them opium, have failed. Bromide of potassium in small doses has appeared to be of little or no service, but in large doses it has scarcely ever failed to give much relief.

Sir Charles Locock has the merit of introducing this drug to the notice of the profession (*Lancet*, May 20, 1857), and the testimony of all those who have had much experience in the matter concurs in a remarkable degree

to its utility. Given in doses to an adult ranging from ten to thirty grains, three times daily, it has had these effects: In some cases it has completely cured the patient, and the cure has been permanent. In other cases it has arrested the attacks, so that none have occurred for periods varying from a few months to two or three years; but on the omission of the medicine the seizures have returned. In such cases the attacks have again ceased on the readministration of the medicine. In a third series of cases it has diminished the frequency and severity of the seizures, but has not removed them altogether, the patients while using the bromide having had one-half or one-third of their habitual number.

Dr. Reynolds further adds: "It is to be demonstrated, in my opinion, that there is something specific in the action of K. Br. potassium. Given as an iodide it is without much effect; and bromide, given as bromide of amonium, has no obvious influence upon epilepsy; but in combination these two "elements"—bromide and potassium—are of undoubted value."

The Doctor does not think that it exercises any influence, as used above, on the sexual organs, either for propensity or power, but that it is positively curative of epilepsy when given in doses as above recommended. He further states that he has given it to hundreds of individuals and has witnessed no ill effects from its administration.

"As to diet," continues Dr. Reynolds (I quote him because I think there is no better authority), "and regimen, these things seem to me important: first, that the patient should eat digestible meals with great regularity; and second, that exercise in the open air should be taken as much as possible short of fatigue. Many epileptics have been relieved from nocturnal attacks by being made to

sleep with the head and shoulders well raised, not by pillows, but by a simple contrivance which is placed under the upper half of the bed or mattress on which they lie. Baths used for the purpose of cleanliness are useful in epilepsy as in many other diseases; but I have seen more harm than good follow the employment of the douche, shower and sitz baths when they have been administered in any manner or to any degree which exceeds that of producing comfort to the individual. Warmth to the extremities, especially at night, is of great value; the patient should never go to bed with cold feet, or run the risk of their becoming cold during the night. Fires, hot water, hot water baths and woolen socks may prevent mischief. Sexual intercourse appears to me also to be one of those matters upon which the dictates of common sense are sufficient without any special direction from the physician."

It is impossible to pay too much attention to the general health of the epileptic, but there is nothing special in regard to this matter. Cod liver oil, quinine, iron, alteratives and aperients must be given in circumstances when their exhibition would be desirable in other forms of disease. Ice applied to the spine has been recommended by Dr. Chapman, but Dr. Reynolds has never seen any good results obtained from it, and he has known it to be applied for months. When a paroxysm is over the patient should be allowed to sleep, and should always be placed with his head and shoulders raised.

ASTHMA—PHTHISIC.

Asthma is a spasmodical contraction of the muscular fibres of the bronchial tubes. It comes on at certain periods, generally at night. It is frequently preceded for days by warning symptoms. There are two species—the dry, nervous, or spasmodic asthma, and the humid or habitual asthma.

SYMPTOMS.

A sense of fulness is felt as a premonitory symptom about the stomach, with lassitude, drowsiness, headache, flatulency, nausea and pale urine. The patient begins to experience a sense of tightness across the chest, with difficult breathing and a wheezing sound; there is a tendency to cough, with some difficulty of speech. The symptoms progress rapidly, become more alarming in their character, and threaten suffocation. A cold perspiration oozes from the body.

There is generally some remission of these symptoms toward morning, the breathing becomes more free, coughing and speaking less difficult, expectoration takes place more freely, and the patient generally falls asleep. The difficulty may not be severe again through the day, though still present to a disagreeable extent, but toward night all the troublesome symptoms again return, and sometimes in an aggravated form. The paroxysms and remissions may continue in this way for several days.

TREATMENT.

For the relief of a paroxysm take unglazed paper and dip it into a saturated solution of nitre, let it soak fifteen minutes, then dry it and fold it in an oven, ignite one end and let it slowly burn in a close room in which the patient is seated, so that he can inhale its fumes. may be repeated occasionally. The paper should be kept prepared by persons subject to the disease. While preparations are being made for this the patient's throat and the upper part of his chest must be well bathed with a stimulating liniment made as follows: Take oil of origanum, two drachms; alcohol, an ounce; olive oil, an ounce; aqua ammoniæ, half an ounce; chloroform, half an ounce. Mix, and apply to the throat and neck with considerable friction, and place the feet in a warm bath. The patient should take internally two to four grains of assafætida and as much powdered camphor every hour or two.

This course will generally cut short the spasm or paroxysm. This we may term palliative treatment. But we can do more; we can cure the disease.

When the paroxysm is over we should commence a strict system of hygiene. We must attend to the skin by the use of proper baths, to the stomach and bowels by a proper course of diet, and take good exercise. The patient must eat wholesome, digestible food; he must keep his feet warm, and wear warm clothes in the winter or cold weather; he must not sleep in a cold or damp room; he must keep away from a hay loft; he must be temperate in all things, and do all he can to promote his general health. In addition to this, one simple drug judiciously used will cure asthma, if it is uncomplicated or not dependent on other disease. This drug is bromide

of potassium. It may be taken three times a day, in from four to eight grain doses. It can be taken in pills or solution; but must be continued for months. It would probably be as well to commence with three grain doses, and every month increase a grain until you get up to eight grains.

This course may be pursued with great confidence; the result will justify the pains. The oldest and most obstinate cases will yield to this plan strictly followed out.

The bromide of potassium in medicinal doses is innocent and harmless, with one exception: it sometimes acts as an *antaphrodisiae*; but this will be well for the patient, as almost all asthma is confined to men, and their cure will be facilitated by it.

It will be observed in this work that I do not often offer specifics, nor do I in this case, only on condition that the proper laws of health are rigidly observed; but if they are, I would be much inclined to offer bromide of potassium as one for this troublesome disease, asthma.

There is a certain school of practitioners that offers lobelia and capsicum as a *specific* for asthma; but every one has seen them fail so often and so signally, even to palliate, that confidence is pretty much lost in them. Both are excellent remedies, however, when indicated; capsicum particularly is a most excellent stimulant.

Bromide of potassium, I omitted to mention in the treatment of the paroxysm, is now well known by those who have tried it to be one of the best, if indeed not the very best, antispasmodic and calmative medicine now in use; therefore its administration in the paroxysm of asthma, or any other spasmodic affection, is proper, and will be followed with benefit.

TETANUS---LOCKED-JAW.

This is a nervous disorder, characterized by spasm. It is caused generally by wounds of the nerves, tendons, fasciæ, and comparatively superficial parts. Lacerated and punctured wounds are more apt to create it than the other classes. I have known several bad or fatal cases of tetanus from a wound by a rusty nail in some parts of the foot.

SYMPTOMS.

There is first, at a period which varies greatly after the reception of the wound, a soreness in the muscles of the jaw, which feels as if the patient had been eating something hard and was tired. This stiffness soon spreads to the muscles of the neck, producing the sensation of "stiff neck," such as is caused by a draught of cold air. A peculiar expression of countenance is then observable, which may be characterized as a painful smile, and is due to the fixed contraction of the zygomatic muscles. At the same time the eyes have a peculiar look—they stare, and are gathered at the corners. The affection of the muscles of mastication soon becoming more marked the masseter contracts so powerfully that the jaws can not be opened, while the saliva or liquid can not be swallowed on account of the muscles of deglutition being involved. A pain in the stomach now comes on, as if an attack of colic were about to begin, and the diaphragm is soon affected, the patient suffering from difficulty of breathing and a spasmodic pain along the insertion of the diaphragm. The abdomen next becomes hard and knotted, presenting the appearance of a tumor, from contraction of the recti muscles, while from spasm of the muscular coat of the bowels constipation and difficulty of passing urine ensue. Meanwhile the intellect of the sufferer remains clear and the pulse natural. If the paroxysms continue they become more violent, and the patient dies in a period varying from two to fourteen days, the shorter period being rarely seen. The prognosis of tetanus or locked-jaw is very unfavorable. The French aphorism is, "Tants des cas, tants des morts," which means so many cases, so many deaths. This, however, is not indorsed in this age and country.

TREATMENT.

The treatment of tetanus may be divided into—first, prophylactic or preventive; second, palliative and curative.

When locked-jaw is feared it is recommended to divide nerves that have been merely pricked. If the sore seems to be ill conditioned it must be thoroughly cauterized by the stick of nitrate of silver and then dressed with warm dressing. On account of the trismus and spasm of the pharyngeal muscles it is almost impossible to administer a sufficient amount of medicine and nourishment to the patient to sustain life, which difficulty is also increased by the fact that the muscular coat of the alimentary canal does not propel the food through it, owing to the continuous spasm which characterizes the disorder.

Dr. Watson says: "In all cases, there being no special indication to the contrary, I should be more disposed to administer wine in large quantities and nutriment than

any particular drug." This conclusion he arrives at after passing in review the principal remedies that have been tried in tetanus—opium, blood letting, the cold bath, ice to the spine, warm bath, bark, mercury, purgatives, foxglove, tobacco, musk, prussic acid, carbonate of iron, strychnine, ether, etc.

If the present theory of spasm be correct the great indication of treatment must be not to depress the circulation, but to rouse it into greater activity; and one reason why the treatment of tetanus has been so eminently unsatisfactory is, to my mind, that this indication has not been fully realized and carried out.

Dr. C. B. Radcliffe, in his article on the treatment of tetanus, says: "In tetanus much wine may be given without producing anything like intoxication, or without relaxing the spasm in any degree." The system in this disease is altogether insensible to wine in ordinary doses. As to this there can be no doubt. There are not a few cases on record which show that the bite of a rattlesnake or cobra or other deadly serpent may be prevented from killing by at once giving ardent spirits in sufficient quantity, and I am disposed to think that these facts have an important bearing upon the treatment of tetanus. There are, undoubtedly, great differences between the condition in tetanus and the condition in these poisoned bites, but there are also certain resemblances which must not be lost sight of. There is the same insensibility to the action of alcohol in ordinary doses; there is an exhaustion to be counteracted which is more rapidly fatal in the poisoned bite than in tetanus, but which in acute tetanus is sufficiently rapid to create the gravest fears and to justify the most heroic measures. There may even be a poison at work in both cases, as well as a wound—a poison introduced into the wound in one case, a poison gen-

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erated in the wound in the other case. There are resemblances between the two cases, indeed, which though not very close, may be close enough to justify the hope that a practice which has been found to answer in the bite of a poisonous serpent may also be found to answer in acute tetanus.

Now, as the evident tendency of this disease is to death by *depression*, can there be a more rational treatment instituted than a sustaining one? Good brandy, then, or whisky, must be freely given; if it can not be given by the mouth it *must* be given by means of injections, and given in either case in connection with good beef tea. This course must be pursued until the system is impressed. The life of the patient depends upon sustenance and rousing. For this purpose no better means than those can be used.

While this treatment is given, the powerful calmative and antispasmodic, bromide of potassium, must be used in six or eight grain doses, three times a day, in connection with medium doses of opium or morphine—three-fourths of a grain of the former, or one-fourth of a grain of the latter. Larger doses of opium must not be given; we only want its stimulating and anodyne effects, not its sedative. If it has to be administered by injection, double the quantity of the opium, and also the bromide of potassium.

The patient must be carefully guarded from cold and from anything that will excite or disturb him. In a word, quiet and warmth are not only desirable, but indispensable.

Such a course of treatment in tetanus will be found to be more satisfactory and more successful than anything heretofore offered.

COLIC-ENTERALGIA.

This term is usually applied to any griping pain of the bowels. It has been divided into three forms—the flatulent, bilious and painter's colic.

It is a spasm of the muscles of the abdomen or stomach, caused always by irritation. An irritating cause is applied to the peripheral extremities of the nerves of the stomach or bowels, and the spasm is caused by the eccentric or reflex action.

Then the cause of colic must always be the presence of some irritating substance in the stomach or bowels. With this view of the case, the treatment is readily suggested, which is to remove the irritating cause by emetics or cathartics, or both, and then use calmatives and antispasmodics.

SYMPTOMS.

Violent pain in some part of the abdomen, with a sense of twisting or griping about the navel. The pain is not increased by pressure, and presents all the characteristics of spasm, by partially subsiding at times. There is fulness and distention of the abdomen, costiveness, nausea, cold extremities, and sometimes a rumbling noise in the bowels. The pain sometimes shifts about in the bowels, and is somewhat relieved by the escape of wind.

TREATMENT.

If colic occurs soon after a meal, and you have reason to believe that crude substances are in the stomach producing irritation, give an emetic of twenty grains of ipecac in four ounces of warm water. As soon as this has operated give an injection of four ounces of castor oil with as much warm water. This should be thrown well up into the bowels, and repeated frequently until a free operation is had.

In the meantime, and as soon as the emetic has operated, give to an adult one-third of a grain of morphine and eight grains of bromide of potassium; if this does not give relief in two hours it may be once repeated, and in another hour give a large dose of castor oil—two or three ounces—to which fifteen or twenty drops of spirits of turpentine have been added.

If, however, it does not appear that the irritating cause is in the stomach, but in the bowels, a cathartic is the first thing to be given. It so happens sometimes that it is almost impossible to get an ordinary cathartic to act; when this is the case, and the attack is at all severe, I would recommend the administration of the following: Take croton oil, four drops; crushed sugar, one teaspoonful; mucilage of gum arabic, one ounce. Of this give a teaspoonful every fifteen minutes until it operates on the bowels. As soon as this is had give the morphine and bromide of potassium.

The above treatment will answer for the flatulent and bilious colic. Painter's colic is treated of elsewhere. The object, it will be seen, is to clear the stomach and bowels, removing the irritating cause, and then relieve the spasm by the anodyne (morphine) and the antispasmodic and calmative (bromide of potassium). This is the *rationale* of colic.

PHTHISIS PULMONALIS.

(CONSUMPTION.)

In this terrible disease the tubercle at first is deposited in a state of fluid exudation from the capillaries, in the same manner that lymph is. In this condition it insinuates itself into the interstices of the pulmonary texture, passes through the lining membrane of the air vesicles and fills their interior. A miliary tubercle may in this manner block up from three to twenty of these air vesicles. It now coagulates and constitutes a foreign solid body, which can only be removed by being again broken down and rendered capable of being either absorbed or excreted. Thus the miliary or infiltration forms; whether grey or yellow after a time it softens—a process which may commence at any part of the mass and gradually affect the whole. This softening is a disintegration or slow death of the tubercular exudation, constituting true ulceration, which is more or less extensive, according to the amount and extent of the morbid deposit. When recent the pulmonary texture in the immediate neighborhood is more or less congested, and when chronic it is thickened and indurated, often forming a capsule which surrounds the tubercular deposit. The bronchi are necessarily involved; their terminal extremities are among the first structures affected, and as the tuberculosis proceeds all the appearances charteristic

of chronic bronchitis are produced. As the ulcerative process extends the lung is more and more destroyed, the excavations become larger and more numerous, until at length it can no longer carry on its important functions and the patient dies, or the fatal result, as very commonly happens, is hastened by disease in other organs. The ulceration or destructive tendency of the tubercular exudation is often checked and for a time slumbers, and even in the worst cases of tubercular lungs numerous cicatrices and evidences of attempts to heal may be seen by post mortem examination. These attempts are more or less perfect, and when ineffectual it is owing to the circumstance that as one portion of the lung cicatrizes another becomes the seat of recent tubercle.

Dr. Bennett observes: "If, then, the further deposition of tubercle could be arrested, there seems no reason why cavities in the lung should not heal with the same frequency as ulcerations or abscesses in other internal organs. Indeed, the careful dissections of morbid anatomists have recently shown that this arrestment, instead of being a rare or occasional occurrence, really happens with extreme frequency."

Dr. Bennett made a series of observations with reference to this subject, and the conclusion he arrived at was that the spontaneous arrestment of tubercle in its early stage occurred in the proportion of from one-third to one-half of all the individuals who die after the age of forty. The observations of Rogee and Boudet, made at the Salpetriere Hospital, in Paris, amongst the individuals generally above the age of seventy showed the proportion in such persons to be respectively one-half and four-fifths. Dr. Bennett gives a case of a young man who at the age of twenty-two or twenty-three must have had an ulcer in the right lung of very considerable size, for when

he died of delirium tremens at an advanced age it was found that the cicatrix in the lung was three inches long. The Doctor observes: "It is, therefore, very probable that the statement made by his friend at the examination was correct—namely, that when young he labored under all the symptoms of advanced phthisis pulmonalis, and that after receiving the appointment of a parish school-master and changing his residence and occupation, and his social condition being greatly improved, these symptoms disappeared. It was about this period that the excavation on the right side healed and the tubercular exudation on the left side was converted into cutaneous masses and so rendered abortive."

Dr. Bennett further observes: "Although the curability of phthisis pulmonalis, even in its most advanced stage, can now no longer be denied, it has been argued that this is entirely owing to the operations of nature, and that the physician can lay little claim to the result."

Andral, who early admitted the occasional healing of caverns, states this in the following words: "No fact demonstrates that phthisis (consumption) has ever been cured, for it is not art which operates in the cicatrization of caverus; it can at most only favor this by not opposing the operations of nature. For ages remedies have been sought either to combat the disposition to tubercles or to destroy them when formed, and thus innumerable specifics have been employed and abandoned in turn, and chosen from every class of medicines.—Dict. de Med., 1st Edit. Phthisie. But if it be true that "Medicus naturæ minister non magister est," as Hoffman says, it follows that by carefully observing the operations of nature, learning her method of cure, imitating it as closely as possible, avoiding what she points out to be injurious, and furnishing what she evidently requires, we

may at length arrive at rational indications of treatment. The cases of both Keith and Barclay, as reported by Dr. Bennett, furnish evidence that we have in a great measure attained this end.

SYMPTOMS.

Phthisis pulmonalis is ushered in with a bad and capricious appetite, a furred or morbidly clean tongue, unusual acidity of the stomach and alimentary canal, constipation alternating with diarrhea, and a variety of symptoms denominated dyspeptic. These symptoms in a great majority of cases accompany the disease through its whole course. Cough is a very early symptom, and one that becomes more troublesome as the disease advances, morbid expectorations, pains in the heart, occasional heat in the hands, feet and cheeks, shortness of breath on exertion, and sometimes profuse hemorrhage. It must be remembered, however, that bleeding from the lungs is not always a sign of consumption. The emaciation increases, the features present a sharp appearance, the eyes seem hollow and languid, hectic fever, &c.

It is impossible in the earlier stages of consumption to make a correct diagnosis without a stethoscope. Auscultation and percussion is the only correct mode of determining pulmonary disease, but in order to be able to use these modes to advantage some experience is absolutely necessary.

CAUSES.

An observation of the circumstances which precede the disease or its so-called causes clearly indicates imperfect digestion and assimilation as its true origin. Thus phthisis is clearly a disorder of childhood and youth—that is, the period of life when nutrition is directed to

builing up the tissues of the body. Diminish the proper amount of food taken by a healthy adult and tubercular diseases are not induced; but if this be attempted with children or young persons, they are a most common result. It has been supposed that a hereditary predisposition, a vitiated atmosphere, changeable temperature, certain unhealthy occupations, humidity, particular localities, absence of light, and so on, predispose to consumption. Very frequently several of these are found united, so that it is difficult to ascertain the influence of each. When they so operate, however, they invariably produce, in the first place, more or less disorder of the nutritive functions, and are associated with dyspepsia or other signs of mal-assimilation of food.

TREATMENT.

Dr. Bennett observes: "From a study of the symptoms, causes, morbid anatomy and histology of phthisis pulmonalis we are therefore led to the conclusion that it is a disease of the primary digestion, causing—first, impoverishment of the blood; second, local exudations into the lung, which present the characteristics of tubercular exudations; and third, owing to the successive formation and softening of them the ulceration which follows in the pulmonary or other tissues, causing the destructive results which distinguish the disease. Further observations show that circumstances which remove the mal-assimilation of food frequently check further tubercular exudations, while those which previously existed become abortive, and that occasionally very extensive excavations in the pulmonary tissue may, owing to like circumstances, heal up and cicatrize. The curative treatment of this disease must therefore be directed—first, to restoring the healthy nutrition of the economy; second, to subduing local irritation; and third, to the avoidance of those circumstances which are likely to deteriorate the constitution on the one hand or induce pulmonary symptoms on the other."

All kinds of food rich in fat will often be found beneficial, hence the value long attributed to milk, especially ass' milk, the produce of the dairy, as cream and butter, fat bacon, etc. But it is not always that such substances will be digested and they lie in the stomach or are vomited. Under these circumstances the animal oils themselves are directly indicated, by giving which we save the digestive apparatus, as it were, the trouble of manufacturing or separating them from the food. By giving considerable quantities of oil directly a large proportion of it at once is assimilated and is rendered capable of entering into combination with the albumen (which is always in excess in the consumptive) when it forms those elementary molecules so necessary for the formation of a healthy chyle. Such is the rationale of the good effects of cod liver oil. Dr. Bennett introduced the cod liver oil in 1841 in the treatment of consumption, and speaks in glowing terms of its success. The cod liver oil is readily digestible under circumstances when no other kind of animal food can be taken in sufficient quantity to furnish the tissues with a proper amount of fatty material. Its effects in phthisis are to nourish the body, which increases in bulk and in vigor, to check the exudation of tubercular matter and to diminish the cough, expectoration and perspiration. The common dose for an adult is a common tablespoonful three times a day, which may often be increased to four or even six to advantage. When the stomach is irritable the dose to commence with is a teaspoonful.

With regard to diet, it may be said in general terms, that one of a nutritious kind, consisting of a good pro-

portion of animal food, abounding in fat, is best adapted for phthisical cases, whilst everything that induces acidity must be avoided. If possible, the patient should be sent to some healthy location and pleasant climate. Every care must be bestowed upon the appetite and digestive organs. Unless a person can take and digest cod liver oil at least in considerable quantities there can be no hope for his recovery. The habit of continually taking some expectorant, as squills, etc., for the cough, or even opiates, is injurious. The stomach must not be burthened with such drugs; if it is there can be no hope that an appetite and digestion can be preserved. A little spirits of ammonia or infusion of colombo or gentian may be used to give tone to the stomach. Good rye whisky may also be used, if it seem to agree with the stomach. Good fat beef tea should be used, and cream and butter, if they agree with the stomach.

It is worse than folly to pour drugs down a patient to combat all the disagreeable symptoms that are sure to be present in consumption—almost any of them that arise, such as diarrhea, debility, sweating, vomiting, etc. The vomiting may be best treated by lime-water and milk—lime-water one part and milk three parts. The other symptoms can be best met by the use of cod liver oil and a judicious course of feeding. If there be febrile symptoms a light sponge bath will be useful, but this must not be administered so as to cause a chilly sensation.

Again I wish to repeat that the disease is caused by a system of improper or deficient nutrition, and the symptoms must be met by a course of good nutritious feeding, at the head of which stands cod liver oil. Beef marrow is also good, in connection with butter, cream, beefsteak, ale, whisky, sherry wine whipped with egg and sugar,

etc., etc. I will also repeat again that it is not well to cram the stomach with drugs, as is the custom of some, for it impairs digestion. Good nursing, careful feeding, and perseverance in the use of cod liver oil will often enable nature, by a process of her own, to heal the lung. Always remember that you have a powerful ally in nature to cure even consumption, if you do your part by sustaining the system with fats.

SCROFULA.

This is a very common disease, manifesting itself under many forms, such as hip disease, white swelling, rickets, bronchocele, glandular enlargements, &c. The glands inflame and suppurate, forming ulcers, which discharge a white, curdy matter, and are troublesome and hard to heal. The disease is a tubercular one, the pathology of which I have not sufficient space to enter into.

SYMPTOMS.

Scrofula generally exhibits itself first in the enlargement of some of the lymphatic glands, particularly those of the neck. The tumors may remain in an enlarged but indolent condition for some time, causing little or no pain; but generally the swelling gradually advances, becomes painful, softens, and then discharges a thin, ichorous matter, mixed with curdy or cheese-like flakes. At first this matter is discharged from several small openings, but eventually they all combine and form an ulcer with

uneven edges. They are apt to be succeeded by other tumors, which run a similar course; and the disease may continue in this manner for a number of years, until it is cured or the system is destroyed by it.

CAUSE.

The cause of scrofula is about the same as that of consumption (want of nutrition). The reader is referred to the article on that disease.

TREATMENT.

For the treatment of scrofula iodide of potassium must be freely used. A good preparation is—iodide of potassium, two drachms; syrup of stillingia compound, four ounces; or, if the stillingia can not be had, syrup of sarsaparilla will answer. Of either of these preparations give a large teaspoonful three times a day. The stomach and bowels must be carefully attended to. Light, nutritious food must be used, and used freely, but in quantities that can be properly digested. Animal food, such as good fat beef and mutton, must be used, with good fresh butter and sweet cream. In connection with this, cod liver oil must be used in moderate doses two or three times a day.

The skin must be carefully attended to by the use of the sponge bath. The general health must be promoted by every means possible, and the treatment long persevered in. The ulcers may be treated as other ulcers.

The syrup of iodide of iron is an excellent remedy, and it would be well if its use was alternated with the iodide of potassium.

THE EYE.

Before attempting to speak of the different diseases of this useful, but very delicate organ it will be necessary to give an explanation of the names by which different parts of it—or at least the most of them—are known. This will become more apparently necessary when it is understood that each of these different parts of the organ is obnoxious to diseases separate and apart from each other, and requiring different treatment. I can not, of course, give a regular systematic anatomy of the eye; nor will it be necessary, for practical purposes, to even refer to all its parts.

DESCRIPTION OF THE EYE.

Several thin pieces of bone form the cavity or socket. The eye is shaped much like a pear, with its large end turned outward. The eye has been described as a ball or bag which contains a clear, thick liquid, somewhat similar to the white of an egg. The coats of the eye, says an old writer, answer to the brass tubes in a spyglass; one is fitted within the other like a nest of boxes. There are three principal coats, the external one of which is called *conjunctiva*. The outside of the eye is called the *sclorotic coat*, which is a thin, white membrane; it is strong, firm, and dense as leather; we call it the "white of the eye." There is an opening in the centre, where

the cornea is set; it is placed here much like the crystal of a watch, and is clear or transparent. The cornea is very hard and firm. Beneath the cornea is the choroid coat, which is the medium for the blood vessels. Beneath this is the pigmentum nigrum, called black paint, which it resembles. Next is the iris, being the colored circle which surrounds the pupil of the eye, and is hung before. the crystalline lens. The iris divides the liquids or humors into two parts—the one before the iris is called aqueous, and the part back of the iris vitreous. The crystalline lens is a small body, convex on both sides, transparent but more dense, lies directly back of the iris, and swims as it were in liquid.

The rays of light enter through the crystalline lens, the impression is made on the *retina*, at the back inner part of the eye, and is conveyed to the brain by the *optic nerve*, the expansion of which, on the back part of the eye, forms the retina. The membrane or lining of the eyelids is called their *conjunctival surfaces*.

CATARRHAL OPHTHALMIA.

In catarrhal ophthalmia the conjunctiva, or white of the eye, becomes swelled and of a red color. It is usually considered the type of conjunctival inflammation, and may be excited by other causes than that of atmospheric influence, such as injury of any kind.

SYMPTOMS.

The eyelids are somewhat red and swollen, especially about their edges. The redness is more intense in the lower lid toward the palpebral sinus; it is also thick and velvety looking. The upper lid may be so much swollen that it overlaps the lower one. The cornea may remain quite clear.

There is at first watering of the eye, the result, partly, of the serous exudation from the conjunctiva; but soon a puro-muculent discharge takes place. The matter accumulates in greater or less quantity at the inner corner of the eye, and in flakes in the palpebral sinuses. Films of this matter get over the cornea and occasion transitory dimness of vision. A flood of tears occasionally takes place. Itching and smarting is felt at the corners of the eyes, heat, and a sensation as if there was a foreign body in the eye—sand, or something of the kind.

In this form the light does not hurt the eye much. The eyelids feel stiff, heavy and tense. There is generally pain across the forehead and in the temples.

CAUSES.

This form may be excited by injury, but is generally excited by atmospheric influences. In this case it may occur epidemically. Under these circumstances it is usually of a very severe form, partaking more of the character of Egyptian ophthalmia in its milder degree—like which also it appears to spread by contagion. Generally both eyes are affected.

TREATMENT.

The patient must be confined to a room a little darkened, take entire rest, use an easily digested and nutritious diet, and his bowels must be kept regularly open, at least once a day, by the use of saline cathartics. His skin must be kept moist by the use of Dover's powders, in from six to ten grain doses, two or three times a day; and also the spirit vapor or sponge bath once a day. This will complete his constitutional treatment, with the exception of tonics, which he must not neglect to use daily, and of which quinine is preferable. If the patient is feeble he should have good wine.

Cold water may be applied to the eye at first, but soon it will be found that tepid applications will be the most agreeable and of the most benefit. This may be done by wringing a cloth out of warm water and placing it on the eye, changing it as often as it seems to cool. A solution of the nitrate of silver—from two to ten grains to the ounce—may be carefully dropped (three or four drops at a time) into the eye. This should always be done by some one who will take pains to raise the evelids and work it about a little to insure the lotion to get well over the whole surface. A preparation of about four grains to an ounce of rain water will generally be strong enough. To apply it the patient's head should be laid back and the nurse drop three or four drops into the eye, and then take hold of the upper lid with his finger and thumb and raise it from the ball, so that the water can run all over the whole surface. This may be done twice a day. At night the edge of the lids may be wet with cold-pressed castor oil. The patient's feet should be often bathed with warm water, and he should have enough Dover's powders at night to make him sleep. The head and shoulders should be somewhat elevated. It is always well in the commencement to examine and see if there is any foreign substance in the eye, and if so, remove it.

PURULENT OPTHALMIA.

This is a form characterized by a discharge of purulent matter, redness of the eye, etc.

SYMPTOMS

The first symptom felt, generally, is a sensation of itching, as if there were sand or particles of dirt in the 34

eye. The eye becomes very red and the conjunctiva swells so as to give the cornea the appearance of an indentation. The eyelids swell and are almost immovable, the discharge is profuse and of a yellowish color. The inflammatory symptoms vary from a mild character to one of great violence, being accompanied with a sharp, lancinating pain, situated deep in the eye-ball. The disease may terminate in bursting of the cornea, abscess of the cornea, ulceration of the cornea, opacity of the cornea, thickening or granulation of the lids, &c., &c. This form may be distinguished from catarrhal by the profuse discharge of matter.

CAUSES.

This form may be produced by injury or the atmosphere, but it is certainly communicated by *contagion*, and prevails some seasons, it would seem, epidemically.

TREATMENT.

The constitutional treatment for purulent ophthalmia must be the same as that recommended for catarrhal. Cold applications to the eye are apt to prove more serviceable in this form, particularly at first. For this purpose if a steady, small stream can be applied for ten or fifteen minutes at a time usually much benefit will be derived from it. A useful application in this form may be made by taking tannin three grains, morphine two grains, slippery elm bark water one ounce, and three grains of sulphate of zinc; mix and dissolve. Of this preparation drop in three or four drops three times a day, in the manner directed for the nitrate of silver in catarrhal ophthalmia. The solution of nitrate of silver sometimes has a splendid influence in this disease, curing bad looking eyes in a remarkably short time. It should be used five or six grains to the ounce. After the disease has progressed the applications must be warm—they may be of water or the bread and milk poultice. The diet may be generous and plenty of wine allowed. Bleeding, leeching, cupping, scarrifying, mercury and antimony must not be resorted to. Many other forms of disease will often arise in which different parts of the eye are affected. The constitutional treatment will be about the same, unless they are complicated with or dependent upon other diseases, in which case the disease must receive the first attention. Many forms of disease of the eye will require surgical operations, in which case I take pleasure in recommending my friend Dr. William Niehaus as an oculist eminently qualified to treat any of the diseases of the eye, and whose name has already gone forth as one among the best operative surgeons in this country. His office is on the corner of Eighth and Pine streets, St. Louis, Mo.

DISEASES OF THE SKIN.

HERPES.

The name salt rheum or tetter is applied to several diseases of the skin. This is characterized by irregular, elevated patches of inflammation of the skin, covered with thin, irregular white scales. There is some itching and pricking attending the disease. The hands are the parts most generally attacked, and the skin is often divided by deep fissures.

TREATMENT.

This disease often requires constitutional treatment, such as syrup of stillingia compound, four ounces; iodide of potassium, two drachms—to be taken one teaspoonful three times a day. The spirit vapor bath will be useful. Stramonium ointment may be used for an external dressing, and a wash may sometimes be used of a solution of oxalic acid.

SHINGLES.

This disease is characterized by irregular patches of various sizes and of a red color, covered with clustered vesicles, forming a half-belt on the body extending to the middle line.

TREATMENT.

Shingles generally disappear under very simple treatment. The bowels should be regulated and iodide of potassium given in full doses. The spirit vapor bath may be directed, the diet light and nutritious.

RINGWORM—HERPES CIRCINNATUS.

This disease is characterized by patches of inflamed skin forming a circular ring of small size, from the size of a pea to that of a fifty-cent piece. It may attack any part of the body.

TREATMENT.

If the parts be very irritable and much inflamed a poultice of flax seed meal will be necessary, after which a solution of oxalic acid, ten grains to an ounce of water, may be applied. The skin must be attended to by means of the spirit vapor bath. The bowels must be kept regular.

SCALD HEAD-TINEA CAPITIS.

This is a disease of the scalp, and is characterized by minute pale yellow pustules around the roots of the hair and in various situations on the scalp. These pustules increase in size and number and are surrounded with an inflammatory blush and accompanied with intense itching. Crusts or scabs are soon formed, which increase in size and are very firmly attached to the skin. Sometimes the whole scalp becomes involved and presents the appearance of a solid scab.

TREATMENT.

The hair must be cut as close as possible, and a poultice of flax seed meal mixed with a solution of subcarbonate of soda applied, after having first carefully washed the whole scalp with castile soapsuds, tepid or warm. After the poultice has remained all night remove it and wash the scalp clean, and if there seems to be little or no inflammation, apply a weak solution of oxalic acid, one grain to an ounce of water, at first. If this does not produce pain or irritability increase it until it is of ten times that strength; apply this through the day and poultice as above directed at night—both to lessen the inflammation and remove the scab. A drop of creosote may finally be added to each ounce of the solution of oxalic acid. It requires considerable time to cure this disease.

ITCH, OR PSORA.

This is a simple contagious disease of the skin, too well known to need a description here.

TREATMENT.

The custom has been to treat this eruption with sulphur or mercurial ointment. This is unnecessary, as the

oil that is in the above articles is quite enough to destroy it. Simply wash the skin clean with castile soapsuds and anoint it well with lard. Repeat this for a few weeks and nothing more will be necessary.

WORMS.

"Worms are found," observes Dr. John King, "in all animals and in various parts of them. In man they have been met with in the kidneys, liver, eye, lungs, brain, &c.; but those which are more frequently met with infest the intestinal canal. 1. The tricocepalus dispar, or long thread worm, which is a round, white worm about one or two inches in length and occupies the large intestines. 2. The Oxvurus vermicularis, may or thread worm, usually called ascaris. It is a small, thin, white worm, not exceeding an inch in length, with a pointed tail, and chiefly lodges in the rectum, where it gives rise to much itching and uneasiness. These worms are very common to children, though adults may have them. 3. The ascaris lumbricoides or long, round worm, which is a round worm varying from three to twelve inches in length and from the twelfth to the sixth of an inch in diameter; its color varies according to that of the food, being frequently milky or of a brown-ash and occasionally bloodred. It is more commonly found in the small intestines. 4. The tania solium, or long tape worm, is a flat, articulated or jointed worm, with four suckers at its head, of a white color, and varying in length from a few feet to several hundred. It inhabits the small intestines."

With regard to the origin of this singular worm (the tape worm), it has been pretty well ascertained that it is only further stages of development of cysticeri. Now, this cysticeri is a genus of worms of the family of the hydatids. To explain further, hydatids are vesicles softer than the tissue of membranes, more or less transparent, which are developed in organs, but without adhering to their tissue. Man feeds on animals in which those cysticeri are common, especially on the pig, sheep and rabbit; and it has been observed in countries where meat is often eaten raw, as in Abyssinia, tape worms are very common. Each joint of the tape worm is estimated to contain 125,000 ova; these minute bodies pass off by the fœces in incalculable numbers. These ova will produce the worm. Dr. Kuchenmaster fed dogs and cats upon parts of animals which contained different kinds of cysticeri, and subsequently found the tape worms into which these had been transformed in various stages of development, according as the life of the animal that had eaten the cysticeri had been more or less prolonged afterward.

Dr. Bennett observes that "numerous cases have occurred, especially in India, where men encamped on the borders of a lake have subsequently been attacked by tape worm, evidently in consequence of the water they consumed containing the ova of the worm. The parasite also has been known to infest Hindoos who had eaten no flesh. There can be little doubt, therefore, that the numerous ova of tape worms voided by animals may enter the intestines of a man with the food or drink and then be transformed into tænia (tape worm)."

This direct mode of entry must not be overlooked while investigating the undoubted origin of the worm from its cystic or hydatid stage of transformation in the tissues of other animals.

Dr. Fleming considers that the frequency of measly pork in Ireland is due to the pig being reared in the peasant's cabin, where it commonly has a dog for its companion, which animal is almost always infested with tape worm and must void a multitude of ova that find ready access to the aliment of the other. Experience shows that the measle is generated in the muscle of the pig by feeding it with ripe joints of the dog's tape worm, now considered to be the same as the tape worm found in the human, and that the same tape worm is developed in the intestines of a dog fed with fresh measly pork. The measle is not generated in the dog by feeding it with the tape worm eggs. Why, in some animals, these ova are fully developed in tape worm in the intestines, whilst in others they enter the blood and are transformed only into cystic worms (hydatids) in the liver, brain or other organs, is probably owing to the peculiarities of structure, which have not been yet investigated.

TAPE WORM.

The presence of tape worm may be known by a gnawing pain in the stomach, irregular appetite, but generally voracious; and the food eaten does not nourish the system, as evidenced by great emaciation. There is a hard cough, with considerable mucous expectoration, great thirst at times, debility, and small bodies in the excrements of the worm resembling cucumber or melon seeds. Sometimes a few joints of the worm may be expelled at stool.

TREATMENT.

There is a very great number of remedies proposed for the expulsion of the tape-worm. Dr. King says that the "Entozoic Powder" has been used by him for many years and it has never disappointed him in any one instance. He also says: "It is probably unsurpassed in removing any kind of worms which may exist in the human intestines." He says, "it is very bitter and disagreeable to the taste, but it may be relied on as certain in destroying and removing worms, whether in adults or children. It acts by not only destroying the worms themselves, but likewise removes that slimy substance in which they abound, and which is so favorable to their production."

This "Entozoic Powder" is made by taking white Indian hemp root, mandrake, pinkroot—of each, in powder, one ounce; balmony, in powder, two ounces; socotrine aloes, in powder, four scruples: mix thoroughly together.

For a child one year old, place a teaspoonful of the powder in a gill of molasses and give a teaspoonful of the mixture every one or two hours, until it operates freely; after which give a teaspoonful three times a day for several days in succession, or less if it purge too freely. An adult may take half a tablespoonful every hour.—J. King's Pharmacy, page 739.

Dr. Bennett observes, "Of all the vermifuge remedies proposed for the expulsion of tape worm, I have found the ethereal extract of the male shield fern the most effectual—a preparation first proposed by Peschier, of Geneva, and since strongly recommended by Dr. Christison. That it readily dislodges large masses of the parasite has been witnessed by all who have tried it, although it has not succeeded in every instance in permanently destroying or removing the animal. This, however, appears to me in a great part, if not wholly, accounted for by the circumstance that patients on being dismissed return to the same kind of food from which

they originally received the ova of these worms. This is very likely to be the case in certain English counties, where bacon and other preparations of pork are common articles of diet among the people."

Dr. Bennett administered the ethereal extract of the male shield fern to Catherine Watt (aged 25); on the first evening two scruples, followed the next morning by one ounce of castor oil. This caused the evacuation of seven joints of the worm. Another dose of one scruple was followed at night, and one ounce of castor oil next morning. On its action only three joints of the worm passed. Ordered again at night half a drachm of the extract. Next morning, after taking the ounce dose of castor oil, she passed many separate joints and several long portions of the worm. The whole together, when measured, was calculated to be about fifteen yards long. One portion, the Doctor remarks, was evidently formed of the joints of the worm near the head, as they were broader than they were long, and above the tenth of an inch in length. This was on November 23d. She remained in the house until the 6th of December, and although she took the medicine four more times no more joints of the worm came away.

Kamala is another medicine that stands high in the scale for the treatment of tape worms, but certainly the male shield fern extract is preferable to all others.

SYMPTOMS OF WORMS.

The symptoms of the presence of worms are very equivocal, with the exception of the maw or thread worm, which may be known by the annoying and almost intolerable itching which they occasion within the anus, and by their frequently being seen in considerable numbers in the fœces.

In children a paleness of the countenance, itching of the nose, starting and grinding of the teeth during sleep, irregular appetite, a fœtid breath, hard swelled belly, upper lip considerably swollen, sore mouth at times, picking of the nose, one of the cheeks more or less constantly flushed, with more or less fever, may be considered certain evidences of worms. As to the color of the tongue it is rather uncertain; but on a close examination quite a number of small, round, raised, red papillæ may be noticed. Worms frequently cause children to have convulsions.

TREATMENT.

The Entozoic Powder so highly recommended by King will be found useful in cases where the child can and will take it, but it is very bitter, and is often vomited by children. A simple and often efficacious remedy is oil of wormseed (Jerusalem oak), from three to six drops on a lump of sugar morning and evening for five or six days, and then a full dose of oil. This for a child one or two years old; to one five or six, eight drops may be given. Wormseed pulverized and mixed with molasses is a popular remedy.

Pink root (Spigelia Marilandica) is an old time remedy, and thousands can testify to its efficacy. It may be given in powder, in doses of five to ten grains, to a child two or three years old, or an ounce of the strong infusion two or three times a day for a few days. It must not be given in too large doses, as it is narcotic. It may be given to an adult in two drachm doses, twice a day for several days, and then followed by a large dose of castor oil.

The thread worms are sometimes hard to remove from the rectum. Bitter injections, however, will seldom fail to bring them away in a few days: Take balmony, one ounce; mandrake (may-apple root), half an ounce; water, one pint. Mix, and boil to form a pint of strong decoction, to which add a gill of molasses, a teaspoonful of salt, five grains of quinine, and an ounce of tincture of assafætida. Use this as an injection, half a gill at a time, three times a day for several days.

Children often troubled with choking or swallowing, from worms apparently coming up in their throat, may be relieved by drinking a little salt water.

Children after discharging their worms should use a tonic and good diet. Tincture of colombo in small doses is an excellent tonic for the stomach and bowels.

CROUP.

CYNANCHE TRACHEALIS.

Croup is a disease which is characterized by inflammation of the throat and windpipe in children, commencing in the air passages and extending sometimes into the bronchi. It causes thickening of the mucous membrane and an altered secretion, which may become either membraniform or purulent. There is a frequent, sharp, harsh, ringing cough; difficult breathing, with loud, shrill inspiratory sound; altered voice, at first hoarse, afterward whispering or extinct; fever, thirst, loss of appetite, but little or no difficulty in swallowing. Croup is specially a disease of childhood, occurring most frequently from the first to the seventh year, as

statistics and observations show. In one hundred deaths from croup we may estimate 13 as occurring in the first year of life, 25 in the second, 22 in the third, 16 in the fourth, 11 in the fifth, and 13 above that age.

SYMPTOMS.

The first indication is often mere hoarseness in the tone of voice or cry, the child is feverish and either dull or fretful; is thirsty and drinks without difficulty; the tongue has a white fur and is red at the tip and edges. There is some heat and dryness of the skin, and a check to the secretions generally. An occasional short, dry cough may be noticed, which seems to give a peculiar, hoarse, hollow sound—a sound once heard, not likely to be forgotten or mistaken for any other. How readily, and in what pain and solicitude, the mother's quick ear detects that unwelcome sound! It augurs ill for her child. A little harshness may be detected in the child's breathing. The more characteristic symptoms generally come on at night. During the first sleep the cough is noticed to be sharp and harsh, with that peculiar croupy clang we have just spoken of, which is always easily recognized. This may be repeated at some intervals without arousing the child from sleep. The heat and dryness of the skin are now more marked, the pulse is frequent and strong, and the breathing loud and difficult, when some repeated clanging cough, with shrill drawn breath, awakes the child in a fright, struggling for breath. He starts up, is flushed and hot, the eyes glaring and red, a hissing sound accompanies every inspiration, and is very marked and loud after the short, dry, croupy-sounding cough. It is evident that insufficient air enters the chest, although the respiratory efforts are great. The circulation is now also highly excited, the face turgid, the

color deepens, the child puts its hand to its throat as if to remove obstruction; speech becomes impossible, and soon, as if in despair, muscular effort relaxes and air begins to enter the chest more freely.

The paroxysm may come on within a few hours of exposure, and sometimes, though rarely, before the usual symptoms of ingress have been noticed. It may begin at any hour, but occurs most frequently at night, and is seldom delayed beyond thirty-six hours from the commencement of the illness. It may last but a few minutes, or be prolonged with varying intensity for more than an hour. Its first accession is nearly always followed by a remission more or less complete, sometimes so perfect that the most careful examination is required to ascertain the presence of the disease. The most valuable indication of the presence of the disease, even at this early period, is drawn from the respiratory sounds and movements. The voice may attract attention—the cough will soon give the trumpet-note of alarm.

The disease attains its hight by the end of the third day at the latest, but the intensity of the attack may hasten the stages of its advance, and death may occur within forty-eight hours, or less, from its commencement. The characteristics of this second period are, high vascular excitement and an ever-increasing difficulty of breathing. The cough is now almost incessant, or frequently recurring in shocks of convulsive violence.

The third stage is that of apnaa, or failure of breathing, and rapid advancing exhaustion. It may come on in the manner just described, but more frequently is the direct sequence of more urgent symptoms of the second stage, which, when about to lead to this result, present some noteworthy particulars. The voice is whispering, or completely suppressed; the cough stifled, powerless, or

altogether absent; the head is thrown back, the lower jaw fixed, the mouth partly open, and the face livid; the pulse becomes either too weak or too rapid to be counted, the temperature falls, and the perspiration becomes cold and clammy; the features become pale and set, the eyes lose their expression, and become distorted and fixed. Need I say that dissolution is nigh, and another sweet bud of promise is about to be wrung, by the inexorable demand of the enemy, death, from a mother's broken, bleeding heart.

I have been thus particular and minute in giving the prominent symptoms of croup, that each mother may detect its presence the moment it attacks the child, for early treatment is important. One of the objects of this work is to furnish the advantages of early treatment of such diseases as croup, where delay is almost certain death. The child is attacked with croup, the night perchance is dark and stormy, the family physician is miles away—what is to be done? The mother is ignorant as regards this dangerous disease and its treatment; long before the doctor can be summoned and reach the little sufferer his feeble constitution must succumb to the violence of the disease. With these facts staring her full in the face, and her sweet, dying babe before her, what would she not give for the knowledge that would enable her to disarm that disease of its terror and rescue that lovely child—the pride, solace and joy of her heart—from a premature death. And O! with what bitter anguish would she always afterward accuse herself if that child should die from an ignorance on her part that is wholly inexcusable. With the symptoms and treatment of this disease written out plainly, and the book within her easy reach, can she do less than accuse herself of ———! Let her broken heart and guilty conscience answer. I

would not open afresh her wounds by writing the blighting word that will ever be upon her lips. No; I leave her to her silent, withering anguish, like Rachel, weeping for her children and refusing to be comforted because they are not.

But before this sad scene is enacted, and your dear child is laid low in its narrow little grave, acquaint yourself with this dangerous disease; and when it has laid its bloody hands upon your tender babe, meet it with full confidence. By proper medication, nineteen times out of twenty, you will succeed in saving the life of your child. This result can only be attained by prompt action, and a knowledge of the disease and its treatment. This knowledge can only be had by studying it as it has been written by some one of experience.

TREATMENT.

The induction of vomiting in the early stage is the most effective means of arrest, and one that must be resorted to in all stages of the disease but the last. For this there is nothing better than twelve grains of ipecac, powdered, to a drachm (teaspoonful) of syrup and three drachms of water; take also one grain of antimony and one teaspoonful of hot water, dissolve the antimony in the water and add this to the other preparation (ipecac, syrup and water), and give to a child from two to four years old half of the preparation, and if it does not produce vomiting in half an hour give the remainder. The room must be kept at a temperature a little elevated, not too hot, however, and aqueous vapor diffused therein. An easy and effectual way to do this is to pour water on rocks or bricks hot enough to give off a steam, which should be frequently repeated. Water enough should be warmed for a bath, and when the symptoms seem

violent the child's body and limbs should be immersed in it, after which a warm poultice of roasted onions, made by roasting about two onions; bruise them or beat them fine, place them in a vessel, add a pint of hot water to them and let them come to a boil, then add or stir in half a pint of corn meal; when this has become of the proper consistence spread a poultice of it on a cloth and apply it warm to the child's breast and the lower part of the This should be changed occasionally. This I prefer to any other application. A hop fomentation will, however, answer. In the absence of either, cloths wrung out of hot water and applied frequently to the breast and neck will answer. After the action of the emetic and the bath has been had the patient will feel much easier. It will be necessary then to give about two grains of calomel to have an aperient effect on the bowels. This may be aided, in eight or nine hours, by a dose of castor oil. The patient should take four or five grains of chlorate of potash three times a day, well diluted in water. If there be persistence of febrile symptoms, of the cough, or of any laryngeal quality in the breathing, half teaspoonful doses of antimonial wine must be given with each dose of the potash, or a smaller dose at more frequent periods, taking care to give it less frequently as the symptoms subside, and stopping altogether as soon as relief is obtained. The emetic preparation must be kept at hand, so that in cases of threatened paroxysm its full effects may be again induced. It is to be borne in mind that the paroxysm has a tendency to recur even when the disease is not advancing, and that the recourse to the warm baths may afford such relief as to enable the air to be drawn in again, either with freedom or with lessening signs of obstruction. The attack, when treated early, is not unfrequently arrested; the patient requires to be

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carefully watched, that any return of the croupy symptoms may receive timely attention. However favorable the progress, the child should be confined to bed for two or three days, the diet being gradually increased. Durthe first part of the attack cold water is all that should be allowed the child (except the medicine); but later in the disease, if it is a protracted case, beef tea or chicken broth must be given. Calomel should be given from the first and repeated frequently in small doses, interrupted occasionally for the repetition of the emetic. A grain of calomel combined with one-fourth or one-eighth of a grain of ipecac every two hours; if the bowels becomes disturbed the quantities must be lessened; this, however, must not be pushed to "salivation."

The principle is: first an emetic; then a warm bath, poultice or fomentation to the breast and neck, aperient of two grains of calomel, and eight hours after castor oil; then to excite the secretions by small doses of calomel, and produce a little nausea by the use of antimony or ipecac, or both; then a nourishing diet. Repeat the emetics and bath as often as necessary to relieve violent symptoms.

If a stimulant is necessary at any time, carbonate of ammonia will answer the purpose best. Lobelia in some of its forms is an excellent article, and may be used both as an emetic and nauseant; but I prefer the ipecac and antimony, either of them having a better influence on the the skin.

The disease is a formidable one, and has been fearfully destructive to life among children. The mother is not alarmed without good cause when it is announced to her that her child has "got the croup." The fatality that has attended the complaint is largely attributable to delay in the treatment; almost every case will yield readily

to proper treatment, if commenced in its incipiency; but if allowed to proceed undisturbed, even for a short time, the danger is vastly increased. Every mother ought to have at her command such articles as are recommended for the treatment of this disease, and when the first prominent symptom presents itself be ready to treat it while the golden moments last; *delay is dangerous*.

Tracheotomy has sometimes been successfully performed in this disease, when suffocation has been about to take place from the thickened condition of the membrane; but this is an operation that would require a surgeon, proper instruments, tubes, etc. I would not recommend any but an experienced hand to undertake it. In fact, if the directions given in the preceding pages be promptly followed there will be no necessity for such extreme measures. If a physician is called to a case in an advanced stage, and finds the child in a suffocating condition, no circumstance of age or condition should prevent him from giving the child this one more chance for life. Both in this disease and laryngitis hundreds of lives have been saved in that way that could not have been saved in any other.

A popular treatment of croup has been the application of nitrate of silver in solution, varying in strength from a grain to half a drachm to the ounce of water. That this treatment has proved beneficial I have no doubt, but that it is inferior to the course above recommended is certainly apparent to any medical man who will take into consideration the nature of the disease; but used in some cases of membranous croup, in connection with the treatment above, it will prove of great service. The solution should be about three grains to the ounce of water.

HYSTERIA—HYSTERICS.

Hysteria is a disorder of the nerves common to females, but sometimes met with in males. It is a spasmodic affection of more or less intensity, often assuming the most varied forms, and assimilating to almost every disease known to man. The attacks usually commence with a flow of clear urine, uneasiness and irregular motions and rumbling noises in the left side of the abdomen, or the sensation of a ball rising upward to the throat. This is termed *globus hystericus*. This symptom is attended generally with a feeling of suffocation, and sometimes convulsions.

The disease affects principally females of great nervous sensibility and of mental emotion. Women from the age of sixteen to thirty-five, unmarried women, and young widows are most subject to this disease.

SYMPTOMS.

In noticing the symptoms, I shall consider the disease as it occurs in a paroxysm, as it affects sensibility, and as it mimics other diseases. Sometimes there is pain in the left side and abdomen, with a sense of fullness and rumbling, followed by the *globus hystericus*, or ball ascending to the stomach and throat with a sense of suffocation, the patient complaining all the time that she feels "so tired." These symptoms are quickly followed by stupor, insensibility and convulsions, and sometimes laughing or crying without visible cause.

The convulsions consist of a movement of the trunk and limbs. There is often violent beating of the breast with the clenched hands, or tearing of the hair or garments, shrieks and screams, with violent agitation, ending in tears or convulsive fits of crying, and sometimes obstinate hiccough, are some of the varied symptoms that attend this eccentric disorder. The patient sometimes sinks to the ground insensible and exhausted, remains so for a short time and then recovers, tired and crying. The attendant symptoms are great sensibility and irritability of mind, spirits elated, depressed or variable, independent of any visible occasion, with ridiculous fancies. The body is tossed to and fro; wild, incoherent expressions are uttered; with a continual complaint of feeling tired. "I am so tired," is an expression that will very frequently greet your ears while administering to the poor sufferer. There is no froth at the mouth, the tongue is never bitten, and the patient is always conscious of what is going on around her, although she may be unable to speak or move.

Hysteria differs in appearance from epilepsy by the breathing never being suspended, the tongue is never bitten and the attack is not followed by coma, as epilepsy is. The sensibility in various tissues seems to be much increased in some patients; the fleshy part of the muscles are very liable to become so affected. The pain is generally aggravated by pressure, by movement and by moral emotion. It is relieved by resting the affected muscle. It varies in intensity from mere uneasiness to the most acute suffering, destroying all repose, producing fever and general disturbance, and is generally accompanied by weakness and mental depression. There is none of the heat, reduess or pulsation of inflammation. This increased sensibility is called hyperæsthesia. "The

opposite condition, anasthesia or loss of sensibility, is a prominent phenomenon in some instances, and it is probable that nervous women and magnetic somnambulists, whose insensibility is supposed to be a trick, are often merely hysterical women thus affected."

The diseases that hysterics simulate most are suppression of the urine, inflammation of the peritoneum, pleurisy, consumption, laryngitis, loss of voice, paralysis, and disease of liver and spine. Hence it is well to see that there are no hysterical symptoms present before treating one of these diseases. I have seen a lady treated for inflammation of the liver who only had hysteria, another for inflammation of the womb, and others for different diseases, who only had hysteria. The patient deceives herself and tries by strong expressions of suffering to mislead others. A practiced eye is, however, seldom imposed upon by hysterical patients. There is a peculiar expression about hysterical women impossible almost to define; yet when it is once seen it is never forgotten, but readily recognized when seen again. There is a fullness of the upper lip, and a thickness, with a tendency to drooping, of the upper eyelids. Those two last symptoms, I believe, are always present, particularly about the time of, or during a paroxysm. They answer questions in an unpleasant manner, and their pains are always said to be most acute and to be increased by pressure, or by even pretended pressure. And here the important question may be asked: Are these pains and suffering feigned? Certainly not. The belief is wide-spread among people who, it would seem, ought to know better, that in hysterics the whole thing is feigned, and all manner of sport is made of a woman who has the great misfortune to have hysterics. To such I would say that it is as much a disease as the chills, the pneumonia or rheumatism. Ask one of these wise ladies if nervous headache is feigned with her and she will feel that you insult her intelligence and mock her sufferings. Well, this headache is only the effect of *centric* influence on the nerves, while hysteria is *eccentric* influence thrown back upon the muscular tissue, thereby causing convulsions, over which the poor sufferer has no more control than the former has over her headache, or any other disease she may have.

TREATMENT.

The first thing to be done during an attack is to have the patient's clothing loosened, and she must be placed where she can have plenty of cool air, and smelling salts may be applied to her nose. She may then be given a teaspoonful of the compound tincture of valerian, or a teaspoonful of the spirits of lavender compound and a teaspoonful of Hoffman's anodyne, and apply cold water to the head. As soon as she can take it, a full dose of the citratized magnesia must be given. These patients will often take anything or do anything very readily, if you only tell them firmly that they have it to do and just proceed to administer it. If this or some other active cathartic can not be administered, give an injection—of castor oil two ounces, molasses one ounce and warm water three ounces. This must be thrown well up into the bowels and retained as long as possible, and repeated as often as necessary to produce an evacuation of the bowels. If there be any uterine disease or irregularity—and nine times out of ten there will be—it must be treated. There is almost certain to be leucorrhea, suppression of the menses or some one of the diseases peculiar to women, present, and it will be found that but little good can be done for the patient while such disease exists. In all forms of hysteria the general health must be attended to-the bowels kept freely open, the skin bathed, the diet prudent, being careful to select such articles of food as will be easy of digestion and nutritious. Coffee and tea must be forbidden in hysteria. Some of the preparations of iron will be indicated in the treatment. The patient may occasionally take a teaspoonful of Hoffman's anodyne or 20 drops of fluid extract of hyoscyamus at bed time to promote sleep. Her mind should be given to pleasant and wholesome occupation. She should go much into pleasant company and if possible travel some. She will be rather inclined to seclusion, but this must not be allowed; it will only increase her gloom and have a depressing influence on her nerves, which are already in a depraved condition. The cure of hysteria is sometimes tedious, but by perseverance, with proper remedies and a well directed course of hygiene, all cases that are not dependent upon some incurable complication can be cured. Patients with hysteria, if left to their own choice, will not persevere in anything long enough to effect a cure. They need some kind hearted friend who will urge and even force them to persevere in taking their medicine, go into company, take proper exercise, bathe frequently, and attend to all things necessary to build up their shattered nervous system, &c.

In addition to the course already suggested for the general treatment of hysteria when it is uncomplicated, there is a special treatment, or rather an article that may lay some claims to a *specific*, in that disease. I mean the great *calmative* and *anti-spasmodic*, Bromide of Potassium. The influence of this article on spasm of any kind is just now being understood by the medical profession, and in hysteria as well as epilepsy, although these diseases differ materially, the bromide of potassium will exercise a greater power for good than perhaps any other

article. The dose is from three to ten grains, three times a day, but for hysteria one dose each day will be sufficient during the intervals, but on appearance of the approach of an attack it should be used more freely. It may be taken in water or made into pills.

CONSTIPATION OF THE BOWELS.

By constipation or costiveness is meant a partial or complete retention of the feces, they being hard, dry, and in diminished quantity when passed, and voided with or by much straining and sometimes with much pain. It may occur as a constitutional condition, but is more frequently symptomatic of some disease or impropriety. It may generally be attributed to the latter cause, the impropriety generally consisting in improper diet and a neglect to attend to the calls of nature at the proper time. It often arises during pregnancy and is a troublesome disease through it.

As a rule, most people have an evacuation every day, but some persons habitually go to stool twice in the twenty-four hours, while others only have an operation every second or third day. The most important consequences which result from habitual costiveness are irritation of the mucous membrane of the bowels and the reabsorption of excrementitious matters. The functions of the stomach, liver, pancreas, &c., are imperfectly performed, and hence complaint is made of a sense of oppression, mental and bodily. The intellectual faculties

are dulled, the complexion becomes sallow, the skin dry, the urine scanty, and the stools become pale and clay-like and very offensive.

TREATMENT.

Purgative drugs must not be relied upon to cure costiveness. They can not be done away with at one rude blow, but it is possible at once to substitute simple aperients for the various patent drugs, the mischievous blue pills and nauseous black draughts with which the public are in the habit of, and so fond of, tormenting their stomachs. The remedies that may be for a time employed at properly regulated intervals are: castor oil, olive oil, rhubarb, magnesia, sulphate of soda, Seidlitz powders or citratized magnesia. It will, however, be better if the patient can be induced to rely upon and use injections of soapsuds or of castor oil, molasses and water. These are invaluable in removing the hardened, fæcal matter that almost always collects in the lower bowels. In the course of twelve or fifteen days you must try to do away with the use of either aperients or injections and depend upon a well regulated diet, regular habits—going at a certain hour each day and making an honest effort at stool—and the use of tonics. For this purpose quinine may be used in one or two-grain doses every day, tincture of Peruvian bark in one or two teaspoonful doses, or tincture of the bark and tincture of colombo, equal parts, in doses of two teaspoonsful two or three times a day. I have known obstinate cases of costiveness to be cured by the use of an egg beat up raw, sweetened and a little water or milk added to it and drank once, twice or three times a day, an hour before meal time. This acts as a mild aperient, while it has a tendency to build up the general system. After the

stools become regular the use of it can be gradually dispensed with. The diet and proper exercise in constipation of the bowels are of much importance and must not be neglected. Tea and coffee must be dispensed with altogether; in fact but little "slops" must be taken. The patient must use solid animal and vegetable diet, using such articles as agree best with his stomach, not eating oftener than every six hours and taking plenty of time to chew the food well. If these important things are not attended to it will be next to impossible to cure the disease. The skin also must be attended to and kept clean and healthy by freqent baths and friction.

When costiveness is an attendant on pregnancy but little more can be done than use the mild aperients or injections and give proper attention to the diet and exercise. Dr. Tanner says: "Daily exercise in the open air, either on foot or on horseback, stands foremost among the remedies for constipation. General indolence, with too much sleep, must be avoided. There are very few cases of costiveness with dyspepsia arising from sedentary pursuits that may not be cured by the sufferer drinking a tumbler full of spring water, retiring to bed at eleven o'clock and rising at seven o'clock and taking a bottle of soda water, then walking for three-quarters of an hour and afterward breakfasting upon weak tea with plenty of milk, meat, bread," &c. It is often the case that by gently kneading the bowels an action may be had daily, particularly in children and old persons. The bowels are generally much neglected, particularly by women; it is almost impossible to get them to attend properly to their bowels, and owing to this very neglect they often suffer severely. It should be the rule of every one's life to see that the bowels are regularly evacuated at least once daily, and for this purpose every one should have a certain hour to go to stool and make the effort. Habit has much to do with us in this as well as in almost every respect.

TABLE OF DOSES FOR CHILDREN.

It must be borne in mind that the amounts stated for a dose in this book is intended for adults, unless it is otherwise stated at the time. As a general rule the dose for a child under one year old will be from one-sixteenth to one-twelfth of that for an adult, at two years old one-eighth, at three years old one-sixth, at four years one-fourth, at six or seven one-third, at twelve one-half, at sixteen two-thirds, at twenty-one years old a full dose. This rule must be varied according to circumstances, the strength of the child, &c.

Children can not take opium and its preparations in doses as large in proportion, but must have more calomel than the proportion as above. Mild purgatives will be oftener indicated in the treatment of children than adults, and will almost always give relief.

PURE DRUGS.

It is always necessary to procure good, fresh drugs. If you fail to do this you will be doomed to disappointment. I have long dealt at two drug stores in St. Louis, and take pleasure in recommending each of them to the public. One is on the corner of Fifth and Market streets—the firm of Jones and Sibley—the other on the corner of St. Charles and Sixth streets—the firm of T. &. E. Catlin. Both are entirely reliable.

DISEASES PECULIAR TO WOMEN.

AMENORRHEA—ABSENT MENSTRUATION.

Amenorrhæa is the name given to absent menstruation, either when it has never appeared, or been obstructed by some cause or other after its appearance. The name emansio mensium has been given to that form of amenorrhæa in which the menses have never appeared, and suppressio mensium is the name given that form in which the menses have appeared and then been obstructed from some cause. A third class might be added, consisting of those cases in which menstruation is irregular as to time, quantity or quality, but without actual suppression. It will be necessary to notice each one separately.

ABSENT MENSTRUATION.

SYMPTOMS.

Emansio mensium, that form called amenorrhæa, in which the menses have never appeared, is ushered in by shivering, pain in the back and loins, aching along the thighs, with a feeling of weight in the lower parts of the body at the time when the menstrual effort comes on. There is also a general lassitude and uneasiness.

A very great difference exists as to the period of the commencement of menstruation in different climates. In warm climates it appears at a much earlier age than in cold, while it may appear in the South at as early an age

as eleven years. It seldom appears in the New England States at an earlier age than fifteen; in fact, fifteen may be set down as an average in the New England and the Western States. It varies, however, in the same country in different individuals, corresponding generally with the development of the body and genital organs.

In addition to the symptoms above enumerated, severe headache, fullness and throbbing of the temples, intolerance of light and sound, irregular action of the stomach and bowels, with general debility, hysteria, and sometimes chlorosis, attend this form of absent menstruation. These attempts at menstruation may occur and pass off every month, causing the patient much pain and often permanently impairing her health. They should always be attended to just as soon as they make their appearance. The mother or guardian of any young lady who fails to acquaint her with the fact that at puberty she must expect the appearance of her menses, and all the facts in relation to them, fails to discharge her duty to that young lady, and such dereliction of duty is unpardonable, as it may cost her much pain and suffering, and perhaps her constitution and life.

TREATMENT.

It is sometimes the case, but very rarely indeed, that the ovaries or uterus are wanting. In such cases there can be no remedy. In other cases it may occur from an imperforate hymen—a thin membrane across the vagina—through which there is no opening and the menstrual secretion can not escape. This is not a serious obstruction, as this membrane is generally thin and tender and may almost always be ruptured with the finger with very little pain. If this can not be done a surgeon must be called in, who can readily make an incision with

a knife. The operation is very simple. If there are other malformations, which do sometimes exist, such as no canal in the uterus or extensive obliteration of the vagina, the case must be placed in the hands of a skillful surgeon. Such cases as these, however, very rarely exist. If none of them exist and there is absence of chlorosis, the case is one of simple amenorrhea and must be treated as such. The treatment will vary according to the condition of the patient; if she is of full habit, seems robust and healthy, with the exception of these menstrual efforts, she must use some mild laxative medicine, such as citratized magnesia, just enough to keep the bowels in a soluble condition, using also at least once a week a cathartic—the compound cathartic pill of the U.S. Dispensatory (a formula of which may be found in this work) is perhaps the best.

The whole surface of the body should be washed as often as three times a week with tepid water, to which enough soda has been added to make it feel sleek. the washing considerable friction should be used. course must be persevered in until the menstrual effort commences again, at which time she should drink freely of warm pennyroyal or tansy tea, taking a hip or vapor bath each night during the period. During the intervals between these efforts the patient must take plenty of exercise in the open air. This in no wise must be neglected. If the patient is weak and nervous she should keep her bowels in a soluble condition or open, as above described. omitting the use of cathartics. During the interval between her menstrual efforts she should use the syrup of iodide of iron in doses of from twelve to twenty drops, three times a day, adding two or three teaspoonfuls of water to it just before taking. The diet should be composed of good, nourishing and easily digested food,

such as soft-boiled eggs, potatoes, carrots and other good vegetables, and beefsteak or mutton. These should be cooked in a manner not to have too much oil about them. A common mode of cooking beefsteak, in the country particularly, is to place the beef in a vessel containing enough "hog's grease" to cover it, and allow it to soak there for an indefinite time, and when it comes to the table it is no more fit to be eaten than the fat portions of the filthy animal (the hog) itself. This is often done without the grease even being hot, which is much worse than if it were, for then the heat would close the pores a little by crisping them, and the oil would not find its way into the meat so freely. A piece of beef that will not furnish juice enough to cook itself is not fit to be eaten. An excellent mode is to take the steak, beat it a little and then place it, after it has been properly salted, in an ordinary skillet, cover it up and place it on a pretty hot fire. When one side is brown turn it over, and when done put on it about half an ounce of fresh butter, and pour on it three or four tablespoonfuls of good, strong coffee, then take it up and it is ready for use, with a rich and excellent flavor, palatable to any person of correct taste, and forming an excellent article of generous diet. Mutton or venison may be prepared in the same manner. If, in addition to this diet, the patient finds it palatable to her taste and convenient, she can use good ale (not lager beer). Young's pale is the best; or good porter can be used with very great benefit.

She *must* take exercise—not active enough to fatigue her, but enough in the open air to increase the circulation of her blood; her body must be rubbed daily with a moderately coarse towel and sponged lightly twice a week with tepid alkaline water. She must, in her diet, avoid all acids and fat, particularly that of the hog. If

she eats hog meat at all let it be the lean portion of the ham, broiled or boiled.

If there is severe pain during those menstrual efforts she may take Dover's powder in five-grain doses every four hours until she experiences relief, which will be given by the time she has taken two or three doses. If, instead of the regular catamenia or menses appearing, only a white discharge appears at the regular time, it only proves that the uterus is working, but that there is a deficiency in the blood, which you are to supply by a continuance of the means recommended, with the exception of the syrup of iodide of iron, for which you will substitute the carbonate of iron in two-grain doses three times a day. The patient will be benefited by the society of lively, cheerful companions, a change of scenery, air, &c., &c.

SUPPRESSED MENSTRUATION,

Suppressio Mensium, is that form of amenorrhea in which the menstrual flow has appeared and been from some cause stopped; it may occur at any time from the commencement of the courses, or puberty, to the "change of life." When it occurs suddenly, it is called acute, and when gradually, chronic amenorrhea.

SYMPTOMS.

Acute amenorrhea is characterized by fever, headache, thirst and quick pulse. The brain, lungs, womb or bowels may be attacked by inflammation. The symptoms, however, will be found to vary much in their severity.

In acute amenorrhea the patient will be subject to fainting, hysteria, loss of voice and skin disease; even

apoplexy has followed a sudden suppression of the menses.

Neuralgic pains often attack the womb; paralysis will sometimes occur. This is decidedly the most serious form of amenorrhea.

The menstrual flow is sometimes suppressed without producing any very marked effect or serious disturbance just at the time, consequently all the symptoms above enumerated are not always present. But the very earliest possible attention should be given to the patient or serious consequences may follow.

TREATMENT.

The first object when the flow is suppressed is, to recall it as soon as possible. This may be done by the use of the warm hip bath, and the free use of tansy or pennyroyal tea. If the pain is severe in the womb, a full dose (ten grains) of Dover's powder should be given. If the bowels are costive, give a full dose of senna and salts, or three of the compound cathartic pills, U. S. Dispensatory. If the discharge is restored, great care should be taken to observe that it appears at the next menstrual period. During the interval the patient must use some good tonic—a tincture of cynchonia or some of the preparations of iron. If it is not properly restored it may terminate in chronic amenorrhea.

CHRONIC AMENORRHEA.

This disease may be the result of an acute attack, or it may be caused by other circumstances, as disease of the womb, ovaries or other organs, or from a gradual loss of health.

SYMPTOMS.

"Chronic amenorrhea, when not the result of an acuteattack, may come on gradually, the discharge being uncertain and irregular in its appearance, but slowly diminishing until it ceases entirely; or there may be a white fluid alternating with the red. There will usually be pains in the head, back and side, irregular and deficient appetite, a gradual failure of the vital powers, ending in a confirmed deterioration of health, most favorable to an attack of some of the fatal organic diseases peculiar to the climate in which the patient resides."

TREATMENT.

"We must be careful to ascertain that the case is one of chronic amenorrhea, and not of pregnancy, before attempting treatment. And again, should the suppression occur at that period when the 'turn of life' is expected, great care should be taken not to use too active medication, but only to palliate severe symptoms, else much mischief might be done.

"Whenever we can ascertain the cause of chronic sup-

pression of the menses, as, for instance, the disease present which occasions it, we must pursue measures calculated to overcome this, whatever it may be, and it will generally be found that on the patient's recovery the menses will return. Under other circumstances, the better course will be a tonic and alterative treatment." Give a solution of iodide of potassium, two drachms to four ounces of water, one teaspoonful, three times a day, in two tablespoonfuls of sweetened water; and a powder of quinine, twenty grains, and carbonate of iron, forty grains, made into twenty powders, one to be taken night and morning. This medicine should be continued, as well as the iodide of potassium, during the whole interval between the menstrual periods.

The bowels should be regular, the surface of the body bathed every day or two with a weak alkaline solution, rendered slightly stimulating by the addition of a little alcohol (or whisky). Exercise in the open air, proportioned to the strength of the patient, is a very important measure, and must by no means be neglected; indeed, females, as a general rule, do not take sufficient exercise in the open air, and a great part of their difficulties will be found owing to those sedentary and unnatural customs which society unjustly imposes upon them. If women would go more among their friends or acquaintances and circulate more freely in the open air, either on foot or on horseback, allowing the "gentle zephyrs to fan their fair cheeks," instead of remaining so much at home and in doors, in place of the pale, sickly hue that many of them continually wear their cheeks would bloom with the rose tint of health and their spirits, instead of remaining forever gloomy and sad, would be exuberant and joyous. Woman's sphere has been narrowed down to too narrow a channel. No wonder the cry is raised by a few

noble spirits for more freedom and for more liberties for women. It will be caught up by others who have nobility of soul enough to take that broad and extended view of the matter that justice and humanity demands, and heralded over this broad, free country of ours in tones of thunder so loud that the deaf, narrow-minded old fogies who are now so firmly opposing it will hear and tremble and step to one side while the ever-rolling stream of progress sweeps proudly and defiantly by them. In addition to a general course of exercise in the open air a nutritious and generous diet must be allowed; coffee and tea must be used very sparingly. Almost every person has fallen into the pernicious habit of drinking something or other continually while taking a meal. This is to be seriously regretted; the meal should be taken without slops, and if you must drink, do so at the close of the meal. Masticate your food well and you will have no occasion for any fluid to "wash it down," the salivary glands will supply an abundance for that purpose. The great object in the treatment of this disease, and in fact most of the diseases peculiar to women, is to try to bring the system to a general healthy standard and then the local difficulties will disappear. This can not be done by medicine alone, nor can it be done by diet and exercise alone; but all judiciously attended to, if there be no organic disease, must succeed.

DYSMENORRHŒA.

Painful or difficult menstruation is the term applied to menstruation which is attended with more or less pain. It may be moderate or it may be very violent, rendering the patient a permanent invalid from its repeated shocks to the constitution. It may appear before or after the

menstrual discharge. From the variation of its symptoms it has been divided into three forms, the neuralgic, the inflammatory and the mechanical. This division is only necessary in order to give the symptoms, for the treatment is the same.

SYMPTOMS.

The neuralgic variety of dysmenorrhœa is generally met with among delicate or nervous females. The menstrual flow is either preceded or succeeded by a headache, which sometimes alternates with pain low down in the back and extending to the lower part of the abdomen and down the thighs. The pain may be constant or may occur in paroxysms, with intervals of ease, and it is frequently so violent as to be almost insupportable. usually lasts from six to twelve hours, when the appearance of the flow relieves it in a great measure. The discharge may be diminished, paler than usual and mixed with clots, and sometimes there is a membrane passed looking somewhat like the thin skin situated between the white and shell of an egg. Ordinarily the general health suffers but little, though sometimes it becomes permanently impaired.

In the *inflammatory* variety there is a severe pain across the back, aching of the limbs, weariness, intolerance of light and sound, flushed face, hot skin, and a full, bounding and quick pulse, often over one hundred beats in a minute. The fever may run so high that temporary delirium will supervene. There will also be considerable swelling and congestion of the cervix and great heat about the parts. The menstrual flow is usually more abundant than in the neuralgic variety, and when it occurs all the severe symptoms are relieved. The thin membrane found in the preceding variety may also be

met with in this. Inflammatory dysmenorrhœa may be accompanied with falling of the womb, uterine leucorrhea, or ulceration of the neck of the womb, the last of which can only be detected by the speculum, and each of which must be removed by appropriate treatment before a permanent cure can be made. During the intervals between menstruation the patient's general health is seldom affected.

The symptoms of *mechanical* dysmenorrhœa are somewhat similar to the preceding, varying according to the causes occasioning it and the attending circumstances. In all the varieties of dysmenorrhœa sterility is the general rule, pregnancy the exception.

CAUSES.

Neuralgic dysmenorrhæa may be caused by cold taken during menstruation, or subsequent to a miscarriage or delivery, or it may follow some sudden or severe shock or mental emotion occurring at the menstral term. It may be mistaken for an abortion, but may be distinguished from it by a knowledge of its previous monthly character and by the quantity of blood being less than in abortion. Inflammatory dysmenorrhæa is more common to plethoric females and those of sanguine temperament, and may be caused by some circumstances which will give rise to the preceding form. Mechanical dysmenorrhæa is owing to a narrowing or constriction of the canal or neck of the womb, which may be the result of inflammation or a long continued falling of the womb and bending of the uterine neck.

TREATMENT.

The bowels should first be acted upon by purgative Seltzer water, or solution of citrate of magnesia or Seidletz powders. Then the compound powder of ipecac and opium (Dover's powders) in doses of five grains every three hours until the patient experiences relief. A fomentation of hops or tansy in the meantime may be applied to the lower part of the bowels, or the spirit vapor bath may be given, which generally gives immediate relief. The above course will relieve the immediate and painful symptoms. The next care will be to use means to prevent the return of the disease.

Dr. John King, Professor of Obstetrics and diseases of women and children in the Eclectic College of Cincinnati, whose interesting lectures I had the pleasure to listen to during the winter of 1855–56, recommends very highly the following pill: Camphor, pulverized, one scruple and a half, sulphate of quinine two scruples, extract of stramonium one scruple, aletridin sufficient quantity to form the whole into a pill mass; mix and divide into eighty pills, of which one may be given every four or five hours.

In this, as in the other forms of derangement of the menstrual discharges, great care should be taken to use a proper, nutritious and easily digested diet, with plenty of healthful exercise in the open air. If the above pill should fail, reliance may be had on the preparations of iron—the tincture, if it agrees with the stomach, standing at the head of the list. If ulceration of the womb be present it must be treated as recommended under that head, or if falling of the womb is present it must be replaced and treated as directed under that head.

"The mechanical form of dysmenorrhea can only be remedied by the delicate and cautious employment of bougies, commencing with one of small size and gradually increasing it until the canal is sufficiently dilated. These must be allowed to remain in only a few minutes at a time and should be reapplied in two or three days, according to the irritability of the patient and the symptoms produced. Any inflammatory symptoms of the part caused by their employment will give way to rest and quiet, keeping the bowels regular and an injection of warm water into the vagina two or three times a day."

MENORRHAGIA.

Immoderate flow of the menses is the term applied to all large or immoderate discharges or flows of blood that take place from the womb at other times than during pregnancy or labor. Uterine hemorrhage or flooding is the term applied to all discharges occurring during gestation or parturition (labor), or which are owing to polypi, ulcers or wounds of the womb.

Menorrhagia may exist in two ways: the menstrual flow may appear every two or three weeks instead of every four, or it may occur at the regular time, but in profuse quantity, or it may occur at unexpected and uncommon seasons, as during pregnancy or in the early months of suckling. It is divided into two forms—the active and passive.

SYMPTOMS.

In active menorrhagia the prominent symptom is a profuse discharge. This alone is enough to make a correct diagnosis from. There will be, however, several other symptoms present, as sudden flushings, alternating with chilliness; a sense of heat and fullness, frequent throbbing pulse, pains in the back and loins, which are frequently relieved upon the escape of blood. The blood is of a florid, red color. The discharge sometimes continues for a month or more, but most frequently ends in eight or ten days, reappearing at the next menstrual period.

CAUSES.

Active menorrhagia may be occasioned by lifting heavy weights, tight lacing, excessive use of strong tea and coffee, cold, strong passions, abuse of stimulants, excessive venery, and whatever will occasion debility of the womb. Its periodical character will serve to distinguish it, though it may exist in connection with a uterine polypus.

Passive menorrhagia may be the result of the active form, or it may have been passive from its commencement, as is apt to be the case among females of weakly, irritable and delicate habits. It is a more serious form of hemorrhage than active, and if not speedily arrested may assume a formidable character.

SYMPTOMS.

In the passive form of menorrhagia the blood discharged is dark-colored, resembling venous blood. The strength of the patient becomes rapidly reduced, the countenance pale, pulse quick and feeble, the extremities cold, and sometimes the whole surface of the body; a distressing sensation of faintness is generally experienced, giddiness and occasional nausea and vomiting, and a very common symptom is a sense of weight and pain in the head, especially over the eyebrows and forehead. In the more severe and dangerous forms difficult and laborious breathing will be present. But the dark discharge of blood from the vagina, continuing for a few days, is the prominent symptom, and enough to make a correct diagnosis from.

TREATMENT.

In the active form, if the patient be of full habit, but little treatment will be necessary, unless the flow is very great or the constitution seems to suffer from it. Sometimes it may remain for years and only subject the patient to some inconvenience—not seeming to affect the general health but very little, if any. This is not always the case, however, for sometimes its effects are plain to be seen in a short time, and, if it is allowed to proceed, the consequence is very serious. The principal means to check it are, to keep the patient in a quiet, horizontal position; keeping the bowels regular by such mild laxatives as citratized magnesia; bathing the external parts with vinegar and water, by means of a wet cloth; and giving astringents internally, such as tannin one grain, alum two grains and gum kino two grains, repeating it five or six times a day. Give also six to ten grains of Dover's powders twice a day. The patient's feet must be bathed in water as warm as she can bear, two or three times a day; it is well to add salt to the water. During the exhibition of these remedies she may drink freely of a decoction, or tea made of beth root, blackberry root, geranium, and the inner bark of white oak, or, if these articles can not all be procured, any one or two of them.

During the intervals between the flow measures must be taken to prevent its return: the patient should be kept quiet; the diet should be spare, but nutritious; the bowels must be kept regular by very mild aperients, such as citratized magnesia. The skin must be carefully attended to by a sponging, two or three times a week, in tepid, alkaline bath. The above tea and powder of tannin, alum and kino may be continued occasionally through the interval, but they need not be given oftener than once or twice a day. A pill—of quinine thirty grains, carbonate of iron one drachm, and opium twenty grains; mix and divide into forty pills, and take one night and morning. Tea nor coffee must not be allowed her; nor

can she be allowed any active exercise, nor in fact, any at all if the case is a very bad one; but if a mild one, she can take a little exercise with advantage, provided, great care is taken not to exert herself any.

TREATMENT.

Of the passive form of menorrhagia, in very mild cases, the tincture of cinnamon given in teaspoonful doses every hour, in a wineglassful of sweetened water, will often give relief. Or the powder, tannin one or two grains, alum two grains, and gum kino two grains, may be given; also, the decoction or tea of the astringent articles mentioned in the treatment of the active form. If the patient seems much depressed, warmth must be applied to the feet, knees and arms, by means of bottles of warm water, hot bricks or irons. If the discharge is very great and seems to be depressing the patient, resort must be had to the tampon. This may be done by taking several pieces of soft linen, muslin or silk, or a piece of sponge moistened with some astringent fluid, and passing it into the vagina so as to plug it up. This will, by causing a clot to form around the openings of the bleeding vessels, prevent, at least for some time, any further effusion. But the plug thus made must not be removed too soon, or the hemorrhage will recur—it should remain for three or four days. If it causes bearing-down pains, a desire to stool or to urinate, it must be removed.

The bowels must be kept regular during the interval; and nutritious diet allowed, with ale or porter, &c. The quinine and iron pill must be used as in the active form; and astringents once or twice a day. Alum water must also be injected well up into the vagina three or four times a day. Attention must be given to the skin, as in the preceding form, adding a little spirits to the bath to stimulate the skin.

CESSATION OF MENSTRUATION.

"Cessation of menstruation generally occurs after the menstrual function has been performed for thirty or thirty-five years, or about the forty fifth or fiftieth year of life, and is always looked upon by females with some degree of anxiety. In consequence of the difficulties which occasionally develop themselves at this time, it has been variously called the 'critical age,' 'turn of life,' 'change of life,' &c.'

SYMPTOMS.

Among healthy females it is not common for them to suffer much; they generally become stouter and the abdomen and breasts frequently enlarge to such an extent as to lead them to think they are pregnant. The discharge usually diminishes, gradually assumes a paler color and eventually ceases permanently; or it may occur at uncertain or distant periods, or alternate with a white discharge. Sometimes there will be a profuse, bloody discharge, and the function become suspended for the remainder of life.

Among delicate females and those who have suffered from previous diseases of menstruation, it is not uncommon to meet with excessive menorrhagia or severe repeated attacks of uterine hemorrhage, jeopardizing life. The same may be said of those who have been intemperate in their passions and pleasures. The symptoms

attacking these vary considerably: much pelvic irritation, with a bearing down sensation, a desire to stool or forcing backward, frequent inclination to urinate, heat and smarting of the parts and tenderness of the vagina, are very apt to be present. A troublesome itching of the parts of generation is a common accompaniment. The person becomes irritable, uneasy, restless, with more or less changes of the moral and mental disposition. With some the skin loses its color and suppleness and becomes sallow and wrinkled, the hair falls off or turns gray, the breasts, at first flaccid and pendulous, finally disappear and the voice becomes masculine. At this time various diseases are apt to become manifest, some of which may probably have existed for some time in a latent state, as vertigo, hysterics, colic, piles, cutaneous eruptions, ulcers of the legs, hemorrhages from various parts, inflammation of various organs, dyspepsia, palsy, apoplexy, insanity, cancer of the womb, profuse sweats.

TREATMENT.

Generally there is little else required than to keep the bowels regular. This may be done by the use of the citrate of magnesia or Seidlitz powder. Attention must be given the skin, as in the preceding forms of menstrual derangement. The diet must be of a good, nutritious and wholesome character. If hemorrhage should be too free, treat it as recommended in menorrhagia. The patient must be very careful about this time to avoid any exposure to cold or any thing that would be likely to cause local disease. When the discharge ceases suddenly, or when there is giddiness or occasional pains in the head, a mild purgative may be taken, as the compound powder of leptandrin, and this should be repeated whenever the symptoms may require.

If secondary disease should arise it must be treated as a primary attack. In most cases when there is a tendency to secondary diseases, alteratives will be required, and none excel the compound syrup of stillingia, with iodide of potassium. Syrup of stillingia compound eight ounces, iodide of potassium two drachms; take one teaspoonful three times a day. When the compound syrup of stillingia can not be procured, iodide of potassium may be taken alone—two drachms in four ounces of rain water—dose, one teaspoonful three times a day; or syrup of iodide of iron twenty drops three times a day. Any nervous derangement must be treated as recommended under the head of hysteria.

LEUCORRHEA.

WHITES-FLUOR ALBUS.

By this is meant a discharge from the vagina (or the female organ of generation), either of a white, brown or greenish color, sometimes very acid, and excoriating the parts so much that they smart and are very painful. It is a disease that very few women indeed escape through life, and as the demands of society still continue to diminish the general health of women the disease increases. It is a sad spectacle, indeed, for the man of sense to view the wasp-like shaped waists of many of the women we see on the streets. Their chests are compressed in such a manner that the organs are displaced; the stomach is forced down into the abdomen, presenting

an unsightly appearance from its increased size; the intestines, from having to make room for the stomach in the space allowed them, displace the womb and press it into the vagina or even out to the external surface. If this organ is at all displaced there is an irritation set up both in it and the vagina which is termed leucorrhea. Besides this, the stomach and bowels are so cramped for the want of room that digestion is but poorly performed, the peristaltic motion of the bowels is interfered with. and costiveness is the inevitable consequence. Nutrition then, of course, is interfered with or imperfect and insufficient, and the general health is impaired, so that the age of thirty—the age that ought to find women in the prime of health, beauty and vigor-finds many of them miserable wrecks, laboring under leucorrhea, falling of the womb, hysterics, etc., etc.

SYMPTOMS.

The discharge from the vagina may be scant or profuse, of a whitish brown or green color, according to the severity of the attack. If scanty and white the attack is mild, if brown or green and more profuse it may be considered more severe and more obstinate, and will be found to weaken and debilitate the patient very fast, causing a disagreeable sense of pain and weight in the back and loins, sour stomach, pale countenance, depraved appetite, colic, palpitation of the heart, and great nervous derangement, with mental depression, small and frequent pulse, her flesh is soft and loose, her breasts soft, the breath fetid, the feet and ankles swollen, and hysterics, with dropsical swellings of the whole body.

When the mucous discharge is of a whitish color, about the consistence of cream, it comes from the vagina, and is not so difficult or so injurious to the patient; but

if neglected, as is too often the case, it will destroy the constitution and make life a burden. Each individual ought to inform herself and be able to detect disease in its very commencement, and then cut it short and save the constitution. When the discharge is from the vagina, as above, it communicates a stiffness to linen upon which it has dried, leaving a grayish spot, deeper at the edges. This form is accompanied often with a troublesome itching and relaxation of the walls of the vagina.

When the discharge is transparent, about the consistence of the white of an egg, communicates no stains, but only a starchy appearance or hardness of the linen upon which it has been allowed to dry, and has a ropy, slimy, tenacious consistence, it comes from the neck of the womb or its canal, and is a most obstinate form of leucorrhea, and one very commonly met with.

There are two varieties of this disease, one termed *mucous* and the other *purulent*. The latter is characterized by a discharge from either the womb or vagina of a purulent matter; sometimes greenish, or of any shade from a very light yellow to a dark brown, staining linen very deeply, and is only removed with difficulty by hard washing.

This discharge almost always issues from an ulcer or excoriation on the neck of the womb, but sometimes from some place in the vagina. This can always be determined by using the litmus paper, as the discharge from the vagina is always *acid*, while that from the womb is always *alkaline*.

This purulent form of leucorrhea often becomes of such an acrid and irritating character as to communicate a disease resembling gonorrhea—almost precisely—and one that, without the use of the microscope, it is almost impossible to distinguish from that disease.

In gonorrheal matter the microscope reveals animalcules at a power of about three hundred, while in that of leucorrhea there are none.

It is very important sometimes to be able to make this diagnosis properly; the happiness of a family may depend upon it.

CAUSES.

The causes are very numerous; too much so to attempt to mention them. In fact, any thing that is calculated to debilitate the system may be named among the causes. The exciting causes may be excessive coition, child bearing in very rapid succession, or very difficult deliveries, cold, dampness, masturbation, purgatives, too long suckling, irritation of the rectum caused by worms or piles, a sedentary life, sudden mental or physical shock, excessive menstruation, &c.; in short, any thing that is calculated to unduly excite the parts or debilitate them.

Frequent attacks of leucorrhea at the present time seem to be almost the common lot of women from the age of puberty to the grave, particularly that class who are rocked in the cradle of ease and luxury. The reasons are very apparent to the thinking man: the sedentary life, high living, uncomfortable fashionable dressing, and want of out door exercise, &c. The country woman who attends to her domestic duties, tends her cow and feeds her chickens, and takes an occasional lesson in her garden, unless she is very imprudent in some other things, will not likely have leucorrhea.

TREATMENT.

The first care of the practitioner must be directed to the general health of the patient. The bowels must be regulated, which can best be done by diet, and the use of an injection into them of castor oil, molasses and warm water if they are very costive. Reference is given to the article on that subject in another part of this book. The skin must be daily sponged with tepid, alkaline water. Proper exercise in the open air must be taken. The cause that produced the disease must be removed or avoided. The diet must be good, easy of digestion and nutritious. The patient may take, three times daily, from ten to twenty drops of tincture of iron, in half a tumbler of water. If her courses are irregular, they must be attended to; if too profuse, as is often the case, they must be checked. If the womb is displaced, it must be treated as directed under that head. If there is: pain or scalding of the urine in voiding it, copaiba capsules may be taken, from six to nine of them daily. If the parts seem excoriated by the discharge, a wash of a weak solution of soda may be used, three or four times a day.

In connection with this, in the purulent form particularly, and in forms in which there are ulcerations or excoriations of the neck of the womb, iodide of potassium, in from three to five grain doses, three times a day, must be given.

If the patient is of a scrofulous habit or diathesis, pills or syrup of iodide of iron should be used.

The means used in this complaint must be persevered in for a considerable length of time.

Local applications are of much service in this complaint. A solution of tanic acid—grains ten, water four ounces—may be injected into the vagina, one ounce three or four times a day. A weak solution of sulphate of zinc, say four grains to the ounce of water, may be thrown into the vagina three or four times a day. Injections will be found most agreeable if introduced warm. They must always be retained for ten or fifteen minutes at

least, which may be done by the patient lying on her back with her hips sufficiently elevated. The sugar of lead will sometimes give very prompt relief injected into the vagina in a solution of five grains to the ounce of water; but it is not always desirable to use it for any length of time, as it is apt to collect and form a cake when there is any abrasion. But perhaps the best and most reliable application is a solution of nitrate of silver, from three to six grains to the ounce of rain water, injected thoroughly into the vagina two or three times a day. This is particularly serviceable when there is any ulceration of the neck of the womb. If it become necessary to keep the walls of the vagina from coming in contact with each other, lint may be introduced, moistened with a solution of tannin and alum, or any of the local applications above recommended. This must be removed and replaced by fresh lint two or three times a day. If the neck of the womb is ulcerated, it may become necessary to introduce a speculum and apply tincture of iron to it by means of a camel's hair pencil, or a solution of nitrate of silver, as the case may require. But if the patient faithfully attends to her general health and uses the means prescribed an improvement will soon reward her for her trouble. Obstinate cases will soon yield. Sexual intercourse, coffee, tea and late evening parties must be strictly forbidden. Good diet, with plenty of out-door exercise in the open air, must be enjoined. High seasoned, stimulating food must be used sparingly.

FALLING OF THE WOMB

(PROLAPSUS UTERI.)

By falling of the womb is meant a displacement of that organ, in which it comes down much lower than it should be, or than it is when in its natural position. It is owing to a want of tone, or to relaxation of the walls of the vagina and the ligaments that sustain the womb.

SYMPTOMS.

Falling of the womb may vary from a very slight descent below its natural situation to a projection through the external parts of the genital organs. A weight and bearing down in the parts is experienced, with a feeling of fullness in the pelvis, a sensation of dragging, which extends from the navel to the loins, with distress in standing or walking, constipation of the bowels, and difficulty in passing the urine, which is unusually hot, are the symptoms which accompany and characterize falling of the womb. Its effects are alteration in the relative situations of neighboring organs, leucorrhea, painful and excessive menstruation, derangement of the stomach and bowels, and depression of spirits.

CAUSES.

It may be brought on by coughing violently, vomiting, over-exertion, or lifting, or it may be the result of leucorrhea, many child-bearings, repeated floodings, or any

other cause that debilitates the general system. It may happen during pregnancy or parturition.

TREATMENT.

If nothing were done in the way of treatment for a patient laboring under this disease, she would become much distressed by all the symptoms which have been described. She might die from weakness induced by the large discharges and the disordered state of the stomach, or she might die from inflammation taking place in the parts contained in the inverted vagina, which are more liable to pressure than when in their usual place—the cavity of the pelvis and abdomen. Such fatal terminations are uncommon. It much more frequently happens that the patient drags on an uncomfortable life for a number of years, till she is destroyed by accident or by some other disease. In mild cases we can often succeed by acting medicinally upon the mucous membrane. the severer ones we are obliged to have recourse to mechanical support.

In recent cases of prolapsus, and where the womb is not protruded beyond the surface, the influence of proper agents, aided by rest in a recumbent posture, will generally effect a cure, if properly persevered in. Cold water may be freely injected into the vagina, three or four times a day, and retained there for five or ten minutes. Also, an injection should be used of sulphate of zinc eight grains, and water one ounce, to be used at a single injection; this should be repeated at least night and morning each day. If there be no abrasions, the sugar of lead may be substituted for the zinc with advantage, but when a surface is excoriated it is never good practice to use the lead; it is too likely to be deposited in such places and do much harm.

The external parts of the genital organs, hips, loins, and the lower part of the abdomen must be frequently sponged with very cold water. The patient must remain as much as possible in bed or in a recumbent posture, using internally tincture of iron, begining with ten drops three times a day, in half a glass of water, and increasing one drop a day until the dose is fifteen drops. If there are no febrile symptoms, a good, nutritious diet should be used, avoiding as much as possible coffee and tea—using them, if at all, in very small quantities; in fact, it may be borne in mind that in all uterine diseases, with perhaps the exception of some conditions of amenorrhea, coffee and tea are positively injurious, and should be used, if at all, very sparingly. This will, doubtless, meet the condemnation of a large majority of my fair readers; nevertheless it is true, and truth and correct principles must not, and shall not, be left unsaid in order to cater to popular taste.

The clothing should be worn loose around the body, and stays and tight lacing must be dispensed with altogether; in fact, tight stays have become a fruitful source of falling of the womb, crowding other organs down and displacing them, and they crowding down and displacing the womb. This course of treatment persevered in will seldom fail to give permanent relief, particularly in recent cases and where the displacement is not very great, and will sometimes relieve cases of long standing and complete prolapsus. In the commencement of the treatment of cases, however old or severe, it is always worth while to give this plan of treatment a fair and patient trial, first replacing the womb if the prolapsus is complete. Some of the very worst cases have yielded to it. If, however, it fails, mechanical means must be resorted to. If the patient is nervous and can not sleep at night, she should take six or eight grains of Dover's powders.

MECHANICAL TREATMENT.

When the descent of the womb is complete and protrudes through the external parts, it must be replaced; this can be done easily by pressing it gently but firmly upward. When it is in the vagina one or two fingers should be introduced in order to replace the womb as nearly as possible in its natural situation. This reduction, however, must not be attempted if inflammation has at any time attacked the internal parts of the tumor. because if this should have happened and be connected with each other by coagulating lymph, the force necessary to accomplish the return of the tumor may separate the adhesion or tear the parts with which they are connected and the life of the patient be endangered. When, therefore, acute pain has occurred in the tumor, with marks of peritoneal inflammation, such as thirst, white tongue, small, quick pulse, tenderness of the abdomen, no attempt should be made to replace it speedily. In such cases it will be necessary to use means to subdue the inflammation. This may be done by the use of saline cathartics, the local application of cold water and the use of Dover's powders. The patient should take salts and senna every day until there is one or two free actions on the bowels each day. Apply cold water freely to the parts and at night take ten grains of Dover's powders. When the inflammation is subdued the parts may then be replaced and a pessary introduced into the vagina to hold the womb to its place. The patient is to continue in bed with the hips a little elevated for several hours.

Pessaries are of various forms, and are made of sponge, wood, ivory, gum elastic, glass and silver, coated with

gold. The last mentioned is preferable, but too costly for common use. Next to it, in my estimation, stands the gum elastic, which is so constructed that it can be introduced and then inflated with air by the patient herself. It must be frequently removed and cleansed. will not be necessary, after a day or two, to wear the pessary at night while in bed, as the womb will stay in its proper place while in a recumbent posture without it. If pregnancy should happen there will be no occasion for the pessary after the third month, and by a careful and proper course of treatment after delivery a return of the prolapsus may be prevented. This will consist in a proper course of bandaging and keeping the patient a much longer time in a recumbent position in bed than is usual in ordinary confinement. After the pessary has been introduced, as above, the bowels should be kept open by gentle laxative medicine. If there is heat and any difficulty in urinating, balsam of copaiba capsules must be taken, which will soon relieve it. A tea made of watermelon seeds will sometimes answer the same purpose. The diet must be light and nutritious, the body sponged regularly with tepid water, to which a little soda has been added; the tincture of iron must be taken for several weeks, and active exertion avoided.

REPRODUCTION.

ITS IMPORTANCE AND NECESSITY.

This subject is one that can not fail to interest every human being. It involves the important question—the origin and reproduction of our species. It is a topic at once full of interest, and not altogether free from mystery. I will only attempt to speak of generation so far as it relates to the production and development of the human feetus.

"It may," says a writer, "however, be observed, that organized beings can be perpetuated only through reproduction. Let the earth be covered, the waters filled, and the universal globe be crowded with living beings, and yet how soon would life become extinct and the world a blank were it not for the constant generation of new beings to take the place of those who have run their race and yielded to the inexorable demands of time. Look at the bills of mortality; see what myriads of the human family are swept from the earth every year by disease and the natural decay of the system—and the same argument applies to all animals—and then tell me whether this prodigious waste does not require a corresponding supply. It is with all living things as it is with the existence of governments and nations; both are to be perpetuated through the laws of succession. Were it not for this great fact, how rapid and final would be the victory of death!"

Reproduction, in its strict physiological meaning, implies the development of a being, so that it may be capable of an external or independent existence; hence it consists of a series of processes which, when completed, constitute the entire reproductive act. The first of these processes in the human species is the contact of the two sexes, known as copulation. The second process is fecundation, which consists in the exercise of a vitalizing influence, through the male, on the germ furnished by the This act of vitalizing or imparting life gives rise to another process, conception. In strict physiological truth, it may be said the male fecundates and the female conceives. Then follows gestation, during which the embryo grows and becomes developed; and when its development has become sufficiently accomplished labor occurs, the object of which is to expel it from the uterus. As soon as this is effected the entire relations of the new being are changed. It breathes, and therefore has a circulation of its own. It is no longer dependent upon its parent for the elaboration of its blood; its lungs, which before birth were without function, commence at once their round of duty. The first gasp of the infant may be considered its declaration of independence.

Its organic existence is now called into action; it receives food, which, through the operation of its digestion, is converted into chyle; this latter passes through the thoracic duct into the venous system, whence, by the ascending and descending venæ cavæ, it is conveyed to the right cavities of the heart, and thence to the lungs, where, through the elaborate action of these organs, it becomes decarbonized, or, if you choose, arterialized; it is then taken to the left cavities and distributed, through the ramifications of the aorta, to all portions of the system, imparting nutrition and development to every tissue.

It is a physiological truth that reproduction is the joint act of the two sexes, and it now remains to be seen what science has disclosed as to the respective parts assumed in this wonderful scheme by the male and female. It would not be profitable to array before you the numerous and conflicting theories which have been maintained with more or less zeal on this subject; I prefer rather to present to you what I believe, at the present day, to be the accepted and recognized facts touching this interesting topic.

The germ cell.—The female in the act of reproduction furnishes the ovule or "germ cell," which is a product of the ovary. These organs—the ovaries—are the essential and only organs of generation, strictly so-called, in the female. At the time of menstruation, and just before each menstruation, on the surface of these organs (the ovaries) there is an ovule, contained in what is known as the graafian vesicle. At first the ovum is in the center of this vesicle, yet in proportion to the contents of the vesicle the tendency of the ovum is to move toward the circumference of the ovisac, so that just prior to its intrusion it is quite near the surface of the ovary; the advance of the ovum toward the outer portion of the ovary is one of the ordinary processes preparatory to its fecundation. This ovule has no inherent power of development beyond its mere growth as an ovule, and after it has reached its maturity, if it be not vitalized by the male, it perishes and passes off with the menstrual blood. But if it should have life imparted to it by the seminal fluid of the male, it lives, becomes developed and constitutes the future being. Indeed, the ovule, at this special period of maturity, is not unlike the luscious peach, as it hangs in full ripeness and flavor from the parent tree; if there be no hand to pluck it in its tempting richness, it falls to

the ground and decays. Women, then, are most apt to become fecundated (or pregnant) at this particular time, just before menstruation, when the ovule, in all its development, lies on the surface of the ovary; therefore the theory that fecundation will not take place twelve days after the menstrual flow has ceased or during the last week before menstruation is an error; and if the married woman who has never been blessed with offspring, notwithstanding the years that she may have spent in unrequited effort and patient toil, will only have intercourse once a month with her husband, and that just before the menstrual period, she will not likely remain long barren.

The sperm cell.—While it has been stated to be the office of the female to provide the ovule, it is the province of the male to impart to it life, so that it may attain, through successive development, its fetal maturity. But what is this vitalizing element? The testes are to the male what the ovaries are to the female. They are glands which constitute the essential organs of generation—they secrete, after the period of puberty, a seminal fluid. This fluid contains spermatozoa, which constitute the real fecundating element; they are small filamentous bodies which enjoy the power of spontaneous motion; they partake of the character of the reproductive portions of plants, which also possess a spontaneous movement as soon as they have been thrown from the parent mass; and it is likewise conceded that the ciliated epithelia of mucous membrane will continue for some time in movement after their separation from the body. In man these are developed within the tubuli of the testicles in what are known as the spermatic cells, within each of which is a vesicle of evolution, as it has been termed, and in each vesicle there is a spermatozoon. The essential fact to be recollected is, that the spermatozoon represents the true fertilizing element and possesses the exclusive power of imparting life to the ovule of the female.

The seat of contact between the germ and sperm cells is the ovary; of this there can be but little doubt at the present day.

The ovule finds admission into the fallopian tube by a combined contraction of the ovarian-tubal muscular fasciculi. It is a veritable spasmodic contraction of this muscular apparatus which consummates the contact.

But the question arises as to the special influence which originates this muscular contraction, or, in other words, what is it that throws these fibres into action? When the graafian vesicle has attained its development and is matured, the distention of the muscular fibres, proper to the stroma of the ovary, begets a reflex movement, which is immediately transmitted to the tubo-ovarian muscular system. This latter contracts, and this brings the extremity of the tube in close contact with the ovary. The ovule is detached, and then conveyed through the vermicular movement of the tube itself to the uterus, where it remains sufficiently developed to prepare it for an independent or external existence.

I have given briefly what may be considered the accepted facts of science touching this interesting question of reproduction in the human species.

PREGNANCY.

Pregnancy may be defined to be that condition of the female which exists from the moment of fecundation until the exit of the child from the maternal organs. Much difference of opinion has existed as to the true nature of pregnancy, so far as the general laws of economy are concerned; and conflicting views have been

advanced as to whether it is or is not a pathological or diseased condition. There can be no doubt that the general system, as the direct consequence of impregnation, undergoes numerous modifications; and it is entitled to consideration whether, as a general rule, these modifications should be regarded as evidences of morbid action, or whether, on the contrary, they should not be accepted as testimony that nature is engaged in the attainment of an object which she can not accomplish except through the operation of certain changes, which, although not morbid, will necessarily encroach more or less on that integrity of functions or equilibrium of forces which, in the unimpregnated female, is looked upon as the standard of health. If the important and interesting period of gestation is indeed a period of diseased action, the destiny of woman would truly be one of bitter anguish, if, in addition to her other sorrows, it were decreed that, while engaged in the great act of reproduction of her species, she should necessarily be subject to the inconveniences and perils of disease.

So far, then, from regarding gestation as a pathological or diseased state, I maintain that, as a general principle, it is entitled to be denominated a period of increased health. I am speaking now of the general rule, and not of the exceptions, to which I will hereafter direct your attention. It is a fact that the probability of prolonged life is increased as soon as pregnancy occurs. Let us now take the converse of this proposition, and you will see, in its results, an additional proof that gestation is not in truth a diseased condition. Look, for example, at those females who, either from choice or necessity, lead a life of celibacy, and see how much greater is the record of mortality. Marriage and preg-

nancy, therefore—however religion may fill the cloister by devoted and self sacrificing ladies—should be regarded as among the covenants of nature; and the demonstration is found in the fact of better health and greater longevity of those who keep these covenants inviolate.

It is worthy of remark that marriage at too early an age is not conducive to health or longevity, but, on the contrary, the mortality among young married persons, I mean of married persons under the age of twenty, particularly women, is very great. I do not think that women ought to marry under twenty-two, or men under twenty-five years of age.

Pregnancy, although not a condition of disease, is one of excitement, in which the entire economy more or less participates.

It is interesting to note the considerate kindness with which the pregnant female was treated in ancient times. Indeed, she became the object of special attention and regard. Among the Jews she was, during the period of her gestation, permitted to partake of whatever meats she desired, no matter how strongly prohibited by the Mosaic commandments at any other time. It was a recognized custom, too, among the Athenians, to absolve from punishment the murderer, whose hands were yet wet with the blood of his victim, if he sought shelter in the house of a woman carrying her child.

Signs of Pregnancy.—The changes in the local condition of the uterus are promptly followed by more or less constitutional excitement. One of the very first organs in which this excited action is manifested is the stomach, as is shown by the nausea and vomiting which in many instances so quickly, and in the great majority of cases so generally, supervene upon pregnancy.

The Suppression of the Catamenia (or Menses).—A popular belief has obtained that when a female becomes impregnated she ceases to menstruate during her gestation. As a general rule this is undoubtedly true; but there are so many other conditions of the system in which this function becomes temporarily arrested that, by itself, it is of but little or no value as a sign of pregnancy. A very popular opinion is—and entertained too by some medical men—that pregnant women never menstruate. This, however, is not a fact. Dr. Bedford, Professor of Obstetrics in the New York University, and one of the "lights of the age," says, in his "Principles and Practice of Obstetrics," a work that I have drawn heavily upon in this and other articles, "I have attended a lady in this city in four confinements who has not had her courses suppressed during any of her pregnancies, and who was never positively certain of her condition until the period of quickening. Again: It is not uncommon for young married women to have a slight show for two or three periods after their first impregnation."

Cessation of the menses may be regarded as a sign of pregnancy, but not a positive one.

Depraced Appetite.—A frequent consequence of impregnation is a depraved appetite—a longing for unnatural food—so that some of your patients will consume with infinite gusto, chalk, slate pencils and other kindred dainties. Some become passionately fond of fruits. I knew a case in which the lady exhibited such a passion for oranges that the quantity she consumed is almost incredible. I attach more than ordinary importance, as a sign of pregnancy, to this depraved appetite, and am disposed to regard it, under certain conditions, as quite a significant circumstance. For example, if a married woman, whose general health has been uniformly good,

should suddenly exhibit this morbid taste, I should be much inclined to look upon it, all things being equal, as strong presumptive evidence of impregnation.

Change in the Breasts.—As a general rule the breasts enlarge. This enlargement is attributable to an afflux of fluids that takes place after impregnation at an uncertain length of time. It may take place in a week or two after fecundation, or not until the third, fifth, or last month of gestation.

Milk in the Breasts.—This is regarded as a very important evidence of gestation; but while it is certainly one of the usual accompaniments of pregnancy, it must not be forgotten that the secretion of milk may take place in various conditions of the system in which impregnation has not occurred. Milk has sometimes been found to secrete in the breasts of virgins and even males; it may be secreted from a diseased condition of the ovaries. Cases are not wanting where milk has been secreted in the breasts of females who are not, and never have been, impregnated.

The womb, from the instant of impregnation until the full term of utero-gestation, is constantly undergoing changes. I shall not enter into a description of them in this work, but the physician places much dependence on these signs when it is necessary to ascertain positively a case of gestation.

Quickening.—It will be observed that all the signs I have given of pregnancy, so far, have admitted of doubts—in fact, all signs are doubtful until the period of quickening, which is about the middle of gestation or about four and a half months from conception. The first movement of the child in the womb, no matter how slight, is the first positive knowledge the mother has that she is pregnant; and while it furnishes her this positive

knowledge, it at the same time gladdens her heart with the knowledge that it is living. It is true the mother who has borne children becomes thoroughly convinced before this time that she is pregnant, from the nausea and vomiting which sometimes set in as soon as fecundation takes place, and from the depraved appetite, which are two of the best signs short of quickening, and from the cessation of the menses, &c. But she may be mistaken; cases are not wanting in which all these signs have failed. I have not spoken of the change in the color of the breasts; it, like the other signs, is uncertain; even the plethora that often occurs may be deceptive.

I have already said that pregnancy was not a pathological or diseased condition; but while the fact is conceded, yet, on the other hand, it is not to be forgotten that many of the sympathetic phenomena characteristic of gestation will sometimes, through exaggerated action, assume a morbid character, calling for the intervention of science.

The derangements of pregnancy may be divided into physiological and mechanical. A true and complete physiological action is nothing more than a natural function, and while it keeps within the particular sphere of duty assigned to it in the mechanism, it can not, by any construction, be denominated morbid. It is only when the physiological function ceases to be recognized by nature as a sound link in the chain of forces which make up the entire working of the system in health that it becomes converted into a pathological or diseased result.

This occurs frequently in pregnancy. For example, there is scarcely a sympathy evoked in the economy as the consequence of fecundation which may not in this manner become morbid and need the attention of a practitioner.

Again, as the result of mechanical pressure, there may occur various phenomena which, from their disturbing influences, are entitled to be termed morbid, and which, therefore, are legitimate objects of medical treatment.

The digestive, vascular and nervous systems may all become more or less disordered, as incidental to gestation, and these derangements will assume various types. The nausea and vomiting, ptyalism, depraved appetite, constipation, diarrhea, heartburn, plethora, &c., are all so many consequences which, under certain circumstances, may require treatment.

TREATMENT.

During the period of gestation, if the patient is judicious in her exercise careful in her diet, and correct in will strictly obsite a cordinances of nature which have been inculcated for her guidance; if, for example, she take her regular exercise in the open air, avoid, as far as may be, all causes of mental or physical excitement, employ herself in the ordinary duties of her household, partake of nutritious and digestible food, repudiate luxurious habits, the exciting accompaniments of the dance, late hours, late suppers, &c.; if she will steadfastly adhere to these common sense rules, the reward that she will receive at the hands of nature will be, general good health during her gestation, and an auspicious delivery, resulting in what will most gladden and amply repay her for her discretion—the birth of a healthy child, which is to constitute both the idol of her heart and the study of her life. But if, in lieu of these observances, the pregnant woman pursue a life of luxury, "eat, drink and be merry," neglect to take her daily exercise, and prefer her lounge, then the case is entirely reversed; she becomes plethoric, and, if not relieved by the employment of appropriate remedies, she often dies, having blotted herself from life by her own folly. You see, therefore, that pregnancy *per se* is not, in reality, a condition of plethora, but becomes so through the violation of laws prescribed by nature; and this is equally true with regard to the general health of the female during her gravid state.

Nausea and Vomiting.—It is conceded that nausea and vomiting are the usual and, so to speak, the natural sympathetic accompaniments of gestation, and, therefore, under ordinary circumstances, do not require the attention of the physician; but sometimes it may become necessary to resort to remedies for the purpose of keeping them within reasonable limits. Morphine in doses of one-sixth or one-fourth of a grain in a teaspoonful of water, or opium in quarter or half grain doses, may be given, and will generally give relief. Sometimes small pieces of ice swallowed, or a piece of ice laid on the stomach, will give relief. A tablespoonful of lemon juice in a tablespoonful of water, or the same quantity of lime water and milk two or three times a day, will answer the same purpose. If the bowels are constipated, which is generally the case, a mild cathartic must be given. For this purpose ten grains of blue mass may be given at night, followed by a Seidlitz powder next morning.

Ptyalism or Salivation.—This symptom does not often occur, but is sometimes an attendant upon pregnancy. If the flow of saliva is excessive, salts may be taken in small doses—one teaspoonful in half a tumbler of water every other morning.

Constipation.—It may safely be affirmed that regularity of the bowels during gestation is the exception, while a tendency to constipation is the general rule. It

is very desirable to assist nature during gestation in removing the general torpor of the intestinal canal; for if it be permitted to continue, headache, fever and loss of appetite will usually ensue. For this purpose a simple enema (injection) of warm water early in the morning, or, what will frequently answer, a tumbler of cold water drank as soon as the patient leaves the bed; or a raw fresh egg well beaten, with a little cold water and clarified sugar, drank as soon as the patient rises from the bed, will generally answer the purpose. Sometimes it will be necessary to use a mild cathartic or some laxative medicine.

Diarrhea.—Pregnant women are sometimes subject to an opposite condition of the bowels, viz.: diarrhea will sometimes supervene on pregnancy almost simultaneous with it, and sometimes it may be brought about by the common causes of diarrhea, such as improper food, cold, etc. If this last is the case a good cathartic medicine must be administered; nothing is better than the citratized magnesia. But if it is dependent on, or an attendant of, gestation, it must be treated with calming enemata or some astringent and anodyne, or Dover's powders in three or four grain doses.

Palpitation of the Heart.—In women of great nervous susceptibility palpitation of the heart is not an unusual attendant upon pregnancy during the earlier months, and if not controlled it may produce miscarriage. If it is due to simple nervous irritability, small doses of quinine—one grain three times a day—with nourishing, digestible food, and an anti-spasmodic, thirty or forty drops of tincture of hyoscyamus once or twice a day, or tincture of valerian, will prove serviceable. If the palpitation, as is sometimes the case, should be occasioned by a plethoric condition of the system, saline cathartics

should be used freely and often repeated, with a moderate diet. Palpitation sometimes occurs in the last months of gestation. This is from mechanical pressure of the elevated diaphragm encroaching upon the capacity of the chest. Patience is the only remedy for this. The bowels must be kept soluble.

Fainting.—Young married women in their first pregnancy are often subject to fainting. The treatment is simple. The patient should be placed instantly in a recumbent position, her head on a plane with her body, in order to facilitate the passage of blood to the brain; the dress loosened, fresh air admitted, cold water dashed in the face, and, if necessary, salts of ammonia applied to the nose.

Painful Breasts.—The breasts sometimes become the seat of distressing pain. If the bowels are costive give salts and apply a liniment of camphorated oil, laudanum and sweet oil, or a bread and milk poultice.

Itching of the Genital Organs.—A most distressing itching of the external organs will sometimes manifest itself during pregnancy. It sometimes constitutes one of the most painful affections with which the female has to contend, causing her to literally lacerate the parts by constant scratching. Ulceration often results. The female, from motives of delicacy, often conceals the fact of her sufferings from the physician until it has reached an aggravated form. The characteristic of the disease is intense itching. When there is no ulceration, saline cathartics and a lotion of borate of soda—one ounce to one pint of water—may be used. If the parts are ulcerated they must be touched every three or four days with nitrate of silver, the parts to be cleansed well with castile soap and water and rest enjoined on the patient. If there is much inflammation or heat about the parts apply

a bread and milk poultice, and if there is a disagreeable odor add to the poultice a little finely powdered charcoal, changing the poultice often. An ointment of calomel—one drachm to an ounce of lard—is recommended to be applied twice a day, after which powder with starch to which one-fourth part of camphor has been added.

Piles.—Piles are not uncommon during pregnancy and often give rise to much distress. The remedy is to keep the bowels in a soluble condition. This can sometimes be done by the administration of a teaspoonful of sulphur in a teaspoonful of molasses or honey; also inject half a pint of cold water night and morning into the bowels. The patient should always after each evacuation introduce the protruding piles within the rectum. This she can accomplish without difficulty. They should never be allowed to remain external.

Many symptoms will occasionally occur that have not been mentioned in the preceding article, but I have tried to treat candidly and in plain terms of the most prominent ones that generally occur; and if others should occur examine and see whether they are nervous or have arisen from plethora. If nervous, treat with nervines; if plethoric, with saline cathartics. But above all attend to the exercise, diet and general habits of the patient; have them correct and there will be but little use for medicine.

ABORTION.

The loss of human life from the premature expulsion of the fecundated ovule is very great, particularly when we take into account the numerous instances in which the loss can not be positively ascertained; such, for example, as in very early pregnancy, when the discharge of blood attending the miscarriage is oftentimes judged to be nothing more than a late return of the menstrual flow. The expulsion of the fecundated ovule from the uterus at any period from conception before the termination of the sixth month is an abortion, and from the seventh month prior to the expiration of the ninth month premature labor. The period of pregnancy at which abortion is most frequent has been a question much discussed by medical writers. Madame La Chapelle, of Paris, a writer of considerable eminence and one whose statements had great weight, has fixed the time at the period of six months, which opinion was generally adopted. Correct observations, however, prove to the The results of practice will exhibit conclucontrary. sively that abortion is most frequent during the earlier months, say from the first to third, and the reason for this is founded on the fact that at this early period the attachments of the embryo to the uterine surface are comparatively so friable that they are more liable to be broken up, thus ending in the premature expulsion of the product of conception. I also think that the primipara is more disposed to abortion than the female who has already borne several children. In the former the uterus, for the first time becoming the seat of those rapid and extraordinary changes consequent upon impregnation, will be more likely to awaken, through reflex or other influences, irritation calculated to terminate in abortion; and this is particularly observed in two classes of patients, presenting two opposite conditions of system, viz.: first, in the excessively nervous; second, in those characterized by unusual plethora.

Causes of Abortion.—It will be a little difficult for a person who does not understand reflex movement or reflex nervous influences to understand how hemorrhoids, a collection of fæcal matter in the rectum, irritation of the vagina, &c., will be likely to provoke early action of the uterus. An irritation is produced on the peripheral or terminal extremity of one or more nerves; the impression thus made is conveyed by the nervous trunks to the spinal cord and the oblongata, by which, and without the interference of mind, an impulse is reflected back, through the motor nerves, to certain muscles, and hence a movement is produced. This is, physiologically, reflex movement.

Among the causes of abortion from excito-motory influence may be enumerated excessive sexual intercourse in the newly married. A calculus in the bladder, or strangury, also the tenesmus of dysentery, all act on the reflex principle. It is on the same principle that a piece of ice put into the vagina will often arrest severe flooding, and on the same principle that titillating the mouth of the uterus with the finger will frequently arouse this organ to severe contraction. Women sometimes soon after parturition experience severe pain in the

uterus from the application of the infant to the breast. This is reflex influence.

Suction of the breast is recommended by Scanfoni for the purpose of bringing on contraction of the uterus in cases in which, from justifiable motives, it becomes desirable to induce premature delivery. Lactation or nursing is a cause of abortion, and it is important for a female who is suckling to wean her child as soon as she suspects that she is pregnant. The extraction of a tooth will sometimes cause an abortion.

There is, however, another distinct class of causes capable of producing premature contractions of the uterus; and they differ from those already named in the important particular that they are centric, that is, their influence is exercised primarily on the medulla spinalis itself, and not secondarily, as in the case of the operation of the eccentric causes, which I have already said is through a reflected, and not a direct action. To illustrate: suppose a pregnant woman receive a blow on the spine, followed by abortion. Here, then, is an example of centric cause, for the reason that its primary influence is on that great nervous centre—the medulla spinalis. Suppose a pregnant woman, from the application of suction to the breast, abort. Then we have an example of eccentric cause. The irritation is produced on the nerves, conveyed to the medulla oblongata and reflected to the uterus, producing the contractions.

Women who have suffered excessive depletion, either from the lancet or the injudicious use of mercury, will be subject to miscarriage. I will take the liberty here to mention a case, a very interesting one, too, of miscarriage by the use of mercury. A very estimable lady, about twenty-four years old, and the wife of one of our best citizens, became pregnant for the third time—having

previously given birth to two fine healthy children. She was laboring under a pulmonary disease, and had been for two or three years. I was called to attend her, she having been attacked with pleurisy. She recovered from the attack very slowly, and finally got able to be up a little, but would occasionally relapse. She went on in this way until about the end of her fourth month of gestation, when her husband, from his great anxiety for her recovery, called two other medical men-not men, however, of my choice—who examined and were made acquainted with the case and its treatment, which had been up to that time palliative, as much as could well be, with tonics at every opportunity. The main object had in view was to conduct the lady to her full term of gestation, when I fondly hoped that she would give birth to her child, and that her strength would rally for a term; with this object I had done all I could to husband her strength. So careful had I been on this point that enemas had been resorted to for the purpose of keeping the bowels open; good whisky and brandy was procured and given her with tonics.

But the medical gentlemen completed their examination, and, to my very great surprise, one of them, during our private consultation, proposed to get the patient under the influence of mercury, to "push it to salivation." At first the other gentleman did not seem to approve the course, but, to my surprise and mortification, he, too, did approve it, and no argument that I could use would shake their resolution. They were the blind devotees of mercury, and, notwithstanding I ventured my prognosis that the lady would not live ten days under that course, they were inexorable. The case was laid before the family, and it was decided that they should try the mercury. Of course I withdrew from the case. The fatal drug was

given. The second or third day ptyalism was produced; the fifth day the lady had an abortion, the fœtus living twenty-four hours; and on the seventh day death closed the solemn scene by claiming the lady.

Two more victims were here sacrificed at the shrine of mercury. Two more souls in one week were launched into eternity by the injudicious use of mercury. Oh! could the silent graves open and give up the victims of that drug, and were they enabled to speak, they would write one of the darkest pages in the world's history. It has perhaps destroyed more fœtal life than any other agent, while its victims of more mature years are named legion. Pregnant women had better avoid it. Many persons will recollect the above case, for in this lady society lost one of its brightest ornaments. Mercury in the hands of the scientific man is a great and powerful agent; but in the hands of the careless, routine, or heroic practitioner, a dangerous weapon of death.

Mental emotions, whether fright, anger, depression, sudden and excessive joy, etc., are all so many circumstances capable of giving rise to abortion, and the influence of these may be said to be through centric action.

Other Causes of Abortion.—Plethora often induces premature action on the gravid uterus. The abuse of amenagogue medicines or a syphilitic taint may cause abortion. Death of the fœtus, no matter how produced, is to be regarded as one of the most certain of all the causes of abortion; and with a moment's thought you will perceive how fortunate this provision is, for the continued sojourn of the embryo in utero, after its death, would necessarily involve, through its decomposition, the safety of the mother, and hence the necessity for its early ejection.

Habitual Abortion.—Some women abort several times

successively, and this is called the abortion of habit. Women who have miscarried once must use great care in subsequent pregnancies. It is well for them, after fecundation has taken place, not to indulge in sexual intercourse until after the fifth month, after which time the chances of abortion will be much diminished, avoiding at the same time all other causes calculated to excite premature action of the uterus.

Symptoms of Abortion.—These may be embraced in two terms—pain and hemorrhage.

Treatment of Abortion.—The first duty is to prevent if possible the abortion. If this can not be done, the next duty is to try to conduct the patient safely through it. It is rather a nice point to determine at what stage it is possible to prevent an abortion. The first thing that is to be done is to enjoin absolute rest upon the patient, in a recumbent position, with her hips slightly elevated. If a portion of the ovum has been thrown off, as is often the case, or when upon examination the ovum can be felt protruding through the dilated os or out of the mouth of the womb, it will be useless to try to prevent an abortion; or if the hemorrhage is very great, such as to endanger the life of the mother, all thought of the fœtus must be abandoned at once and measures taken to facilitate the expulsion. If, however, there is only pain and a moderate degree of hemorrhage, it is the duty of the practitioner to try faithfully and promptly to prevent it. For this purpose a lemonade may first be given, or other acidulated drink, and a solution of sugar of lead twenty grains, laudanum two teaspoonfuls, and water four ounces; give one tablespoonful every three hours. Cloths wrung out of cold water (ice water) may be applied on the back, from the loins down, and upon the genital organ. Cold is an efficient article to produce, directly and locally, and indirectly at a distance, by a reflex action, contractions of the blood vessels; in this way it will often arrest the hemorrhage. If the patient is plethoric it is recommended by excellent authors to bleed to the amount of four, six or even eight ounces. have, however, never had recourse to this practice. will be well, though, to administer a saline cathartic and to give ten grains of nitrate of potassa in a tumbler of water, with five or six drops of tincture of digitalis, repeated every four or six hours until a marked effect is had upon the pulse; then stop it. If the patient be not laboring under plethora, but nervous, a different course must be pursued—you must calm and fortify the system. An injection of thirty drops of laudanum in two ounces of water may be thrown into the rectum, and one-fourth of a grain of morphine taken internally every three or four hours. The lower bowels should be evacuated before this by means of an injection for the purpose. And if the patient has piles it should be seen that they are not allowed to protrude on the outside.

The treatment we have thus far presented in abortion is intended for its prevention when it is merely threatened. I shall now call your attention to the remedies indicated when it becomes impossible to arrest the expulsion of the ovum, and in which the duty will be limited to saving the life of the mother. The true danger in abortion is the fearful hemorrhage. If the uterus is sufficiently dilated to permit the introduction of the finger, introduce it and press the finger backward and forward; this very motion of the finger evokes a strong reflex action, which often results in the prompt expulsion of the ovum. If the uterus has not dilated and the hemorrhage is great, the remedies are—cold, the tampon and ergot. By dashing ice water on the abdomen it will

often cause a prompt action of the uterus, or a piece of ice introduced into the vagina will often act like a charm; in either case the uterus is made to contract in consequence of reflex action. Or the tampon may be applied; pieces of sponge or lint may be introduced into the vagina until it is filled completely up to the uterus; the whole may be kept in place by a bandage. This must not remain longer at one time in the vagina than four hours. This will arrest the hemorrhage and by its irritation cause contractions of the womb. The other means spoken of is ergot, which produces contraction of the blood vessels, and also the contraction of the womb; consequently it is a valuable remedy in this condition. If the ovum is partly protruding out of the womb, it may be expelled by introducing the finger and making gentle traction.

The patient, after abortion or labor, should be kept quiet, her diet light and bowels soluble. If there is great prostration from loss of blood, a half teaspoonful of laudanum and a teaspoonful of brandy in half a cup of strong coffee must be given, and repeated if necessary, diminishing the dose of laudanum.

LABOR OR CHILD-BIRTH.

At the lapse of about two hundred and seventy-five days after fecundation or conception the fœtus becomes properly developed and is capable of an external existence, or an existence independent of the mother. In the divine and wise arrangements of nature the womb contracts, or commences a series of contractions that culminate in the expulsion of the child; this is called "labor." Slight contractions are sometimes felt in the uterus for two or three weeks before labor really commences. This sometimes gives rise to uneasiness or fears in the minds of those experiencing them. Such fears are groundless; for observation has shown that there is less fatality in them, and in fact in all slow and what may be termed tedious cases, than there is in the quick ones.

I have stated above that about two hundred and seventy-five days after conception labor may be expected. By this I do not wish to be understood to say that this period is the definite and fixed duration or full term of pregnancy; for certainly, if there is any truth in statistics, the child may be carried for a much longer time, or it may be expelled a fully developed child at a much earlier period; but this term is fixed by some writers as an average term, and will be found to be as nearly the time as can well be fixed. It is difficult to ascertain the exact time at which conception takes place. An opinion has long prevailed among women that they could tell the

exact moment of fecundation by a strange and indescribable feeling. That this may be true in some cases I will not deny; but in all, or even in any considerable number, I do deny most positively.

It is a well known fact that women often become impregnated when they are as cold and passionless almost as the bed on which they are lying, while others enjoy that peculiar pleasurable sensation very frequently and do not become impregnated at all. Women generally count from the last menstrual flow, but this is very uncertain, for while a woman is more liable to become pregnant just before a menstrual flow than at any other time, because the ovule is always present and ripe, if I may be allowed the expression, just at the time of the catamenia; but while this is true, it is also true that she may be impregnated at any time between the menstrual periods; consequently there is a term of almost four weeks that it may vary.

Professor Bedford, in his "Obstetrics," gives a rule that he finds to work well. He says: "Imagine, for example, the termination of the last menstrual to be on the tenth day of January; then count back three months, which will correspond with the tenth day of October; now, to the tenth of October add seven days; this will bring you to the seventeenth day of October, the day on which the labor will commence."

Symptoms of Labor.—The main and characteristic signs of labor are four in number: the first of which is pain; the second is dilation of the mouth of the womb; the third is a mucous discharge; and the fourth the formation and rupture of the membranous sac, or "bag of waters." These four constitute the elements and make up the diagnosis of labor. When they are present, labor is undoubtedly in progress. It is necessary

to discriminate between what is termed "true" and "false" pain. It is only necessary to mention that true pain is the effect of uterine contractions, and that false pain is not, but may be produced by a great many causes, and is generally continuous, while the true pains caused by the contractions of the womb are periodical, and during the interval between them the patient is easy and often converses cheerfully. Pain is the inevitable penalty of child-birth. It is one of the penalties fixed by the unalterable decree of Jehovah upon woman for the disobedience of the mother of all in the beautifult garden of Eden.

"Unto the woman He said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee."

The pains at first are usually slight; they are first felt in the back, and usually pass on to the thighs. They are not continuous, but come on at intervals. When the true pain is present, the entire era of the womb becomes hard; and this change in its condition can readily be recognized by placing your hand on the abdomen.

Dilation of the os uteri or mouth of the womb.—If, upon examination, the womb is found to be dilated, and during a pain the membranous sac, or "bag of waters," is felt to protrude, and there is a free mucous discharge, it may be a certainty that labor has commenced.

Natural Labor.—If, upon examination, it is found that the vertex, or crown of the head, face, the breech, feet or knees, present, it may be considered natural labor. In either of these presentations, if there arise nothing to complicate the delivery, nature can, by her own resources, accomplish the expulsion of the child. As soon

as labor has commenced, the next care is to conduct the patient through it safely. If the bowels have not been evacuated for a day or more, and especially if there be fæcal matter in the rectum, it is quite essential that an enema (injection) should be administered, or a dose of castor oil, if preferred; and, also, if there be an accumulation of urine in the bladder, the patient should be directed to relieve herself by passing it off.

Quietude in the Room.—This should be earnestly urged. The patient should be kept quiet, with as little noise and disturbance in the room as possible. Let her be saved the perils of excitement from the presence of persons who can render no assistance, but who contaminate the air and by their frivolous conversation disturb the patient. I know from long experience in such cases that it is the custom of women to gather in great numbers on such occasions, and with the kindest intentions, all willing and anxious to render assistance to the sufferer: but such gatherings are generally a disadvantage to the patient, for whoever has witnessed a gathering of this kind can readily testify to the fact that a vast amount of noise and confusion is sure to prevail; and it is very often the case that some one of the party, less discreet than the others, will recite what she has seen or heard of in the lying-in chamber of an unpleasant and frightful character. By such recitals the mind of the patient is filled with terror, and great harm may result from it; or, as I have frequently witnessed, the patient may be much annoyed by untimely jokes and unnecessary questions, or may be much alarmed by a disagreeable habit some women have of whispering their fears about her safety or that of the child. It is always better if there is much company to have them stay in a separate room, and only allow two or three at farthest in the room with the

This number includes the one who officiates or attends the case. This can be performed by any woman of ordinary sense, who will spend a little time in studying the rules which are laid down in this book. It is natural that women should attend these cases; every feeling of refinement and modesty demands it; in fact, common decency cries aloud for it. It can be done by women as well as by men. Nature left to herself will accomplish the work in due time and in safety. There are more lives lost by meddlesome midwifery than are saved by all the assistance that has ever been given by science. In nineteen cases out of twenty there is simply nothing to do but wait for nature to perform the work. It is true there are occasionally cases of preternatural labor, in which assistance is necessary, but even in these the female who has been properly educated in this branch can render that assistance.

There is now a growing and commendable desire among intelligent females to become acquainted with the diseases and their treatment peculiar to themselves at least. This should be encouraged and every facility given them, until it shall no longer be necessary for them to undergo the humiliation and exposure of laying their case in detail before a physician. I confidently hope, in the progress that marks everything in the present age, that the time is not far distant when the science of medicine will be taught and become as much a part of an education as mathematics or English grammar is now—when it will be disrobed of its present mantle of technicalities and clothed with plain English. When this is the case it will be as easily understood and as readily comprehended as any of the ordinary sciences.

Impropriety of Frequent Examinations.—It is improper during the first stage of labor to be frequently

introducing the finger into the vagina. It is annoying and injurious to the patient. After you have satisfied yourself as far as may be of the true state of things by the examination at the commencement of labor, there can be no necessity for more than one or two repetitions until after the escape of the waters, when it again becomes necessary to explore and inform yourself as to the progress of delivery and the precise position of the presenting part. The patient should be allowed some bland nourishment, such as tea, gruel, etc.; but not wine or spirits, unless specially indicated.

Stages of Labor.—In order to simplify the matter, we will divide labor into three stages: the first will consist in the full dilatation of the womb and rupture of the bag of waters; the second stage, the descent and expulsion of the child; the third, the delivery of the placenta (after-birth). During the commencement of the first stage the pains are slight, passing from the back to the thighs, and are called grinding. It is not until the womb is dilated and the membranous sac and presenting portions of the child begin to make a decided pressure upon it that the pains assume a strongly marked bearing down character. Before this time it is not necessary to urge the patient to "bear down," as it is termed; if you do she only wastes strength that she will likely need before she is through; but at this period she can much aid them and facilitate labor by "bearing down."

Position during Labor.—It is a great mistake, before the rupture of the sac of waters, to confine the patient in any particular position. She may be allowed to sit up, walk, recline, or, in fact, do as she pleases. The broadest latitude may be given her. But after the rupture of the sac it will be prudent for her to remain in bed. She should then take a position lying on her back.

Rupture of Sac of Waters.—As a general principle, when the womb has become sufficiently dilated to enable the head of the child to pass, there is a spontaneous rupture of the sac, followed by an escape of more or less of the amniotic fluid (waters). Care should be taken not to rupture the sac prematurely; the result would be a more protracted delivery and sometimes an injury to both mother and child. There are cases in which it may be necessary to rupture the sac early in labor; that is when it is extremely rapid from the commencement and you fear a too quick expulsion of the child, with its annexe. The too rapid evacuation of the contents of the womb might throw that organ into a state of inertia, which would give rise to great hemorrhage and endanger life; but these cases are rare.

Second Stage of Labor.—The second stage of labor commences when the membranous sac has ruptured and the waters or a portion of them escaped; the contractions of the uterus increase in violence and become decidedly expulsive. It will be well now to make an examination to ascertain the state of things with regard to the true position of the child and its progress. You must now have in readiness a piece of tape, or a string made by doubling together about four strands of common cotton thread—a piece of tape is much better and should always be used—you must also have in readiness a pair of scissors to cut the navel cord with, after it has been tied about two inches from the body of the child. will be well now to attach a sheet to the foot of the bed that the patient may grasp it with her hands, and with her feet well braced she should pull gently, and be directed to bear down and assist nature. It is during this stage that the patient will complain of great pain in the back. As the head of the child approaches the

vulva, or external parts, the patient will feel an urgent desire to evacuate the bowels, and will want to leave the bed for that purpose. This she must not do, for, at this advanced stage it would endanger the life of both the mother and child. The desire is caused by the pressure of the head of the child against the rectum. The head having approached the external opening, the perineum (that part that is between the anus and vagina) becomes extraordinarily distended and must be supported or it might become ruptured; this support can be given by taking a piece of linen, folded in the hollow of your hand, in order to constitute it a plane surface, and make during the pains a firm and equable pressure on the perineum, being careful not to press directly against the head of the child so as to retard its progress. In the last struggles, just about the time the head is making its appearance into the world, the patient will sometimes be attacked with nervous tremblings. They are of no sort of importance, and need give rise to no disquietude. When the head has thus escaped there is experienced great relief. The first care now is to see if the cord encircles the neck of the child. If it does, and is tight, you should relax it so that it may be gently drawn over the head; if it is very loose around the neck, you need not trouble it, unless it can be very easily removed. is well also to introduce the finger into the child's mouth and remove any phlegm or mucous that is in it. The child will generally then be found to gasp and give evidence that it is alive. The next pain will generally expel the body; when it must be laid near the vulva, with its back to the mother. The child will generally be heard to cry, which is conclusive evidence of respiratory action, and you may now proceed to tie a piece of tape around the cord, about two inches from the body, after which you must cut the cord a little in front of the ligature. It is the custom of some to tie two ligatures and cut the cord between them, and urge the necessity of this to prevent hemorrhage, but I can see no force in this argument, for there is no way for hemorrhage to come from the patient through this cord at this time; the second ligature, however, can do no harm and may be applied. The child may then be removed to a blanket, previously warmed and prepared for this purpose, when it may be washed and dressed in the ordinary manner.

Third Stage of Labor.—This consists in the expulsion of the placenta, or after-birth. As soon as the child has been expelled, place your hand on the abdomen immediately over the womb, for the purpose of being assured that the womb responds to the birth. The evidence of this response will be, that you will feel the organ gathered, as it were, upon itself, occupying the lower portion of the abdominal cavity, and presenting the feeling of a hard, contracted object. In the recognition of this circumstance your mind is at ease with regard to the fear of flooding. Suppose, on the contrary, instead of this contracted condition of the uterus you should find the organ uncontracted and in a state of inertia, occupying more or less of the abdomen. This state of things would at once admonish you of the certainty of flooding; and being thus admonished you must lose no time in staying the current, which if not promptly checked will destroy the life of the patient.

FLOODING is the great danger to which lying-in women are exposed, and a circumstance, therefore, that demands the prompt attention of the attendant. From a little indecision or neglect here the patient is lost. The flood-gate is opened and the life-current will flow out in a very few minutes. There is no time for consultation now—

no time for the perusal of books to see what shall be done. That inexorable enemy, Death, is pressing for his victim, and but for the prompt interposition of science, the chamber of sickness will be converted into the gloom of desolation and heart-stricken grief.

But in this emergency the female attendant may not despair; she can be equal to the emergency. She can here grapple with the monster, Death, and wrest from him his victim. It is only necessary for her to know her duty and perform it, which she can do as well as the physician, and much better than hundreds of them do.

It is necessary to know what the cause of flooding is. This is easily understood; there can be no mistake about it. When a woman has profuse flooding after the expulsion of a child from the uterus, it is because this organ is in a state of relaxation—a state known as inertia. If the womb contracts flooding can not take place. Just as soon as this organ can be made to contract, all fears of flooding may cease; then the great object will be to cause the womb to contract as s eedily as possible. I will assert here that for this purpose no internal remedy will do to depend upon. Ergot will not produce contractions of the womb under fifteen or twenty minutes. and before this time the patient will be dead. The tampon has been often used, but it is worse than useless in a flooding of this kind. It is the practice of some to remove the placenta or after-birth; but this does not afford relief, and for many reasons is a bad practice. The only means that can be confidently relied upon are pressure and "Remember," says Dr. Bedford, "there is no time for compromise, no time for capitulation; the enemy, with bold front and intent upon destruction, has laid his grasp upon the victim and the issue of life or death will be determined by the promptness and character of the resist-

ance. Therefore what you are to do in the management of hemorrhage (flooding) is this-introduce your hand, without a moment's delay, into the uterus, carry it up to that portion of the organ to which the placenta is partially attached or from which it has been completely separated; with the expanded dorsum (back) of the fingers make gentle but uniform pressure against the bleeding utero placental vessels, and, with the other hand applied to the abdomen, make counter pressure. Should the womb not contract, have recourse immediately to the cold dash. Let a pitcher of ice water be thrown from a hight-say two feet-suddenly and with impulse upon the abdomen, and repeat it without hesitation should it be necessary. Such are the heroic, substantial and common sense remedies in these cases of desperate hope, and they will often serve you faithfully in the hour of need. As soon as the uterus begins to contract gather up the after-birth in your hand, should it be within the organ, and keep it firmly in your grasp until, by powerful contractions, it, together with the hand, is expelled. Striking benefits will be derived from the introduction of a small piece of ice into the vagina or uterus—the contact of cold thus suddenly applied will oftentimes occasion immediate contraction of the organ by the stimulus applied to the excitor nerves of the part, inducing the full influence of reflex movement. Injections of ice water into the rectum will also act powerfully upon the uterus through reflex agency. Ice water as a drink will occasionally display great efficacy in uterine inertia, causing contraction of the organ, through its impression on the pneumogastric nerve, which is also an excitor of the uterus."

The pressure and cold are the great remedies in this flooding, and if properly carried out will prove efficient.

When it has become necessary to use cold to arrest flooding, it will be necessary the moment the uterine contractions take place to apply warmth by means of bottles of warm water, warm flannels, etc. In doing this the patient is not to be moved, for the slightest exertion would be likely to produce fainting. The patient must not for a considerable time assume the upright or sitting posture; it may cause sudden death. After the flooding has ceased the patient may still sink and exhibit the aspect of a moribund woman—deadly pallor of countenance, cold surface, no pulse to be detected in the wrist or temples. In these cases, which so closely assimilate dissolution, there is no time to be lost; you must give her stimulants, such as brandy, strong coffee, with twenty or thirty drops of laudanum; care must be taken, however, in their administration. When reaction is established the strength must be sustained by animal broths, arrow root, jellies, &c.

Internal hemorrhage must be treated precisely as external. No attention must be paid to the clots of blood or the discharged placenta, but the hand should be introduced, as before directed, and pressure made against the bleeding surface. Contraction of the womb is the great object; if this is accomplished the patient lives, if it is not she dies—there is no help for her. Expulsion of the placenta is a normal condition of things preceded by the detachment from the uterns. This detachment is accomplished by the contractions of the womb in from five to twenty minutes. Ordinarily the patient will have pain, which will be followed by a slight discharge of blood. These are the evidences that the placenta is disengaged. After the placenta has become detached from the uterus and the organ contracted, and nature does not expel the after-birth, it may be removed easily by taking hold of the cord and making two or three twists of it around two of the fingers of one hand, pulling gently, making traction up and down, right and left—not abruptly, for the cord might break, but gently and firmly. Its delivery will readily be accomplished in this manner.

A bandage twelve or fourteen inches wide should then be placed around the patient, making slight pressure on the abdomen and over the womb. Two or three hours afterward the stains and blood should be sponged off with warm water, the soiled linen removed and the patient placed comfortably in bed. Another chapter will be devoted to her further care and that of her child.

SECONDARY FLOODING.

A flooding may occur at any time after delivery, from two hours to two or three weeks. This form of hemorrhage is called *secondary hemorrhage*.

It will generally be traceable to some portion of the membranes, after-birth, or coagulated blood having been retained in the uterus. If this is the case, the substance must be removed at once, and the flooding will usually cease. The bleeding may be the result of a partially flaccid state of the uterus, not amounting to inertia. If this be the case, ergot may be administered with confidence; it will bring on contractions of the womb. In connection with the ergot, a half pint of cold water may be injected into the rectum. Sometimes in plethoric women the bleeding will be due to congestion of the uterus, in which case a free dose of epsom salts or Seidlitz's powders must be given, and the patient kept on strictly abstemious diet.

MANAGEMENT OF THE WOMAN AFTER LABOR.

After the placenta (or after-birth) has been delivered, a napkin should be warmed and placed to the vulva, or the external parts of the organs of generation, to protect the patient against the discharge which, in more or less quantity, will necessarily pass from the uterus. napkin should occasionally be examined to see if there is from any cause too much oozing or hemorrhage. Previous to this, however, the abdominal bandage should be applied. This bandage should consist of a strip of linen or cotton cloth, folded once, and about twelve or fourteen inches wide; sufficiently long to encircle the body. object of applying it is to afford gentle and equable support to the abdomen, which has been in a state of great distention; and, now that the child has left the uterus, it is, on the contrary, in a remarkably relaxed condition. The patient should not be permitted to make the slightest effort in the arrangement of the bandage. It should be passed under her next to the skin, and arranged so as to come well down over her hips. It must not be drawn too tight; if it is there is danger of producing inflammation of the womb of the most stubborn character; it must be drawn so as to produce gentle pressure and support, and then attached with pins. The patient should now be permitted to rest quietly for two or three hours, when the stains and clots of blood may be washed off with a sponge or cloth, wet in warm water, and dry, clean clothing put on her, and the bed clothes

changed, at least all of them that are wet and soiled. During all this the patient must remain in a recumbent position, and not exert herself in any way; she must now remain quiet, and sleep if possible. No wines or toddies or other stimulants must be allowed her, unless there is something to indicate their use. A cup of tea or some warm gruel may be given her if she desires it, and then leave her to quiet repose; it is what she most needs.

After-Pains.—These pains are nothing more than the contractions of the uterus ridding itself of the fluids contained within it, and, at the same time, through these contractions, gradually returning, as it were, to its pristine state. After-pains are, therefore, not morbid, but may be classed among the usual and necessary phenomena of child-birth.

In a woman with her first child (a primipara) these pains are ordinarily slight; in (a multipara) a woman who has borne children, on the contrary, they are often severe and harassing. If they become very annoying it may be necessary to give a Dover's powder of five or six grains occasionally; but unless they are quite annoying and prevent sleep it will not be necessary to interfere with the natural process. The patient should use a bed pan and not be allowed to sit on a pot, for a few days at least; this may seem a little inconvenient, but she will be amply repaid for it by an immunity from such accidents as prolapsus uteri or providentia of the organ, or prolapsus of the vagina. If in twelve or fifteen hours the patient can not pass her urine and the bladder is distended, as may be ascertained by feeling, cloths wet in warm water may be applied to the genital organs and over the region of the bladder; if this course does not soon give relief by the patient passing off the urine,

a female catheter must be introduced and the water drawn off.

If the bowels of the patient have been neglected, as most women are in the habit of doing at all times, and particularly during the last months of gestation—a thing very detrimental to their health—the lower bowels will be loaded with feecal matter and cause great distress and much harm if not removed. For this purpose an injection must be used, composed of a pint of soapsuds, an ounce of castor oil, four tablespoonfuls of molasses and one of table salt. This must be thrown into the rectum and will soon give relief. If the lower bowels are not in this loaded condition, and have been moved just before confinement, it will not be necessary to interfere with them until about the third day, when a laxative of castor oil or salts should be given and an action produced. The patient ought by all means to retain her recumbent posture for at least ten days. I know it is hard to keep some women from getting up earlier, but they incur great risk, and hundreds and thousands lose their health and lives by it.

The patient's diet should be light, consisting of tea and toast (not buttered), or gruel, boiled rice, or soft-boiled eggs, etc., for at least five days. If everything goes on well she may then gradually resume her regular diet. When she begins to nurse it sometimes happens that the nipples get very sore and become a source of great annoyance. When the nipple is fissured or has small cracks in it, a solution of nitrate of silver, five grains in an ounce of rain water, will be useful; wet the parts several times during the day, but be careful to wash it off before allowing the child to nurse. When there are no fissures a little borax and water, or two or three grains of sul-

phate of zinc to an ounce of water, applied several times a day, will soon give relief.

Draw the Breasts.—If the breasts are not kept properly drawn and milk is left in them, the milk ducts become greatly distended and inflammation ensues, which, if not promptly arrested, terminates in suppuration. If the child is not able to disgorge the breasts get a young pup, which is much better than any machine I ever saw for that purpose. The moment inflammation of the breast is noticed fomentations of hops or other bitter herbs and poultices must be applied, giving the patient some of the saline cathartics—salts, citratized magnesia or Seidlitz powders. If pus forms the breast must be opened. This distressing complaint will not often occur if the breasts be kept well drawn.

Management of the New-born Child.—The first thing to be done for the little stranger is a thorough washing. The surface of the new-born infant's body is usually covered with an unctious or sebaceous material, and in order to have this properly removed it will be necessary before using the soap and water to rub the entire surface gently with sweet oil, or, what will answer the same purpose, the yolk of a raw egg. Then warm water and castile soap may be applied by means of a sponge or soft flannel. The soap should not be allowed to come in contact with the infant's eyes; if it does it is likely to cause that annoying and often dangerous complaint, purulent ophthalmia. When the washing is done the skin should be dried with a warm, soft linen cloth.

The next object is the dressing of the cord. Take a a piece of linen about three inches square, double it and cut a hole in the center, through which the cord is to be drawn. The cord is then enveloped in the linen, turned upward and to the left on the abdomen. A circular band

is applied, which will retain the dressing in its place and also afford comfortable support to the child. Care must be taken that the bandage be not too tight. Pins should not be used for the fastening; a stitch with a needle and thread is much preferable, as the pins may stick the child and cause serious trouble. The child may then be dressed.

The practice obtains too generally of cramming the child's stomach with castor oil, teas, butter and sugar. The best rule is to give the child nothing, for the simple reason that it needs nothing but the material that nature has so carefully prepared for it, and that material is the mother's milk. As soon, therefore, as the mother has had her repose and rested from the fatigues of labor, say in two or three hours, the child should be put to the breast. There may be no milk in the breast, but the early application of the child is one of the best promoters of the milk secretions; the traction made upon the nipple invites the milk to the breasts, and the child at this early period extracts what is known as the colastrum, an element that possesses purgative qualities, and which readily and effectually removes from the intestinal canal a black, viscid material found in greater or less quantities in the bowels of the new-born infant. In contemplating these things how often we are led to exclaim, how wonderful and how perfect are the arrangements and provisions of nature! But why should they not be? for God in His divine wisdom ordered them. Truly, indeed, it is a fool who says in his heart, there is no God.

If the child is unable to get any milk from the parent, you must give it a teaspoonful of olive oil or a little brown sugar and water, or equal parts of water and molasses. This will move its bowels; and if still unable to get any milk from the parent, it must be fed on cow's

milk diluted with water. This approaches more nearly to its natural food than anything else.

Flat Nipples.—If the mother's nipples are flat so the child can not get hold of them, the difficulty may be remedied by taking a pint bottle with a long neck and filling it with hot water and then pour the water out and apply the bottle over the nipple; as the bottle cools there is a tendency to a vacuum, and thus a powerful but equable suction is produced, which results in the elongation of the nipple. The bottle is then removed and the child applied.

PUERPERAL CONVULSIONS.

Puerperal convulsions is one of the most formidable and perilous complications of gestation and labor. They may appear during pregnancy, at the time of labor, or after delivery. Under any circumstances their presence is fraught with danger.

The convulsions are produced by nervous irritability, and that of the spinal cord; this irritation must be had by either centric or eccentric action or causes. An influence applied directly to that nervous centre is centric; an eccentric cause is an irritation produced on the peripheral of one or more nerves, and the impression thus made is conveyed by the nervous trunks to the spinal cord; the impression, altogether independent of mind, becomes a sensation which results in a matter of impulse; this latter is transmitted to certain muscles, and hence an abnormal movement of these muscles is the

result. This is reflex action. Flourens has demonstrated that muscular action can not be produced by irritation, either of the cerebrum or cerebellum, or purely cerebral nerves, if the irritation be strictly confined to these portions of the nervous mass; and he has further shown that muscular movement is the product of irritation—either direct or indirect—of the true spinal cord. Now, the eccentric causes are, indigestible food in the stomach, morbid matter of any description in the intestines, irritation of the bladder or rectum, or irritation of the uterus or the vagina. The centric causes may be, plethora, congestion of the spinal cord, or congestion or vascular fullness of the brain and spinal cord.

By keeping these facts before us it does seem to me that it will not be hard for us to arrive at the true cause of the convulsions in any case; and, when we fully understand the cause, it will certainly not be, in most cases, a difficult matter to remove it. That we may understand this matter, I repeat, the cause is nervous irritation, either centric or eccentric. If the irritation is of the stomach, bowels, bladder, rectum, uterus or vagina, it is eccentric, being produced on the peripheral extremity of nerves and conveyed along their trunks to the spinal cord, and results in a motor impulse, which is transmitted to certain muscles producing the abnormal movement or convulsion. If by plethora, a vascular fullness or congestion of the brain and spinal cord, or the spinal cord alone, is produced, it is centric. Also, the emotions, such as grief or joy, and an anæmic condition of the system-from these there may sometimes come puerperal convulsions, but rarely. They may be enumerated among the centric causes.

Symptoms of convulsions are: the face becomes suddenly fixed, with a twitching of the muscles; the whole

expression is altered; the eyes at first roll, and then become stationary, usually turned upward; the pupils are dilated; the lips are drawn in many directions, and exhibit rapid movements; general distention of the countenance, with tumefaction of a livid hue; foaming at the mouth; protrusion of the tongue; violent pulsation of the carotid and temporal arteries, with marked engorgement of the jugulars; the head, in consequence of irregular action of the muscles of the neck, is usually drawn to one side. These changes are accompanied by spasmodic contractions of the muscles of the arms. while the hands are firmly closed—other muscles often partake freely of the contractions—the breathing is short and irregular, and sometimes momentarily suspended, through the contractions of the glottis, with intermittence of the heart's action. During all this time there is complete loss of consciousness. The attack is followed by stertorous breathing, the patient presenting the general condition of an apoplectic. After a certain time the stertor ceases and consciousness usually returns. The attacks may come on every few minutes, or hours may intervene between them. These convulsions once witnessed will not likely be forgotten.

These convulsions may be known from hysteria by the entire loss of consciousness, while in hysteria there is no loss of consciousness, nor is there frothing at the mouth. They may be known from catalepsy by the characteristic feature in that disease, which is the uniform persistence of the limbs during a paroxysm. They may be known from chorea by the disturbance of the mind, while it is undisturbed in chorea. That affection consists principally in an inability to control muscular movement. It may be known from tetanus or lock jaw by the continued rigidity of the limbs in lock jaw. It is very hard

to distinguish puerperal convulsions from epilepsy; about the only difference is the coma that follows puerperal convulsions, which does not follow epilepsy.

TREATMENT.

If possible, the first thing to be ascertained is the cause of convulsion; this may always be done by the appearance of the patient, or what you will be able to learn of her from her friends or nurse. If you find the patient to be plethoric you need not make much inquiry as to other facts. You will find a strong, bounding pulse, and when this is the case the lancet has to be resorted to —but remember, only when there is a full, bounding pulse. The custom has been to bleed them at once and bleed freely, eight, twelve or sixteen ounces, or until an impression is made upon the system. This is wrong. But administer a cathartic of senna and salts. Soon after give an enema, of castor oil two ounces, molasses two ounces, and warm water four ounces. This must all be thrown well up into the rectum. Bedford, in his excellent work on "Obstetrics," recommends oil of croton four drops, crushed sugar one teaspoonful (a drachm), and mucilage of gum arabic one ounce; to be taken a teaspoonful every fifteen minutes until the bowels are moved. After the plethora has been overcome by the cathartic, Dover's powders and Hoffman's anodyne should be used—five to ten grains of Dover's powders every four hours, and forty drops of the anodyne every four hours, alternating every two hours. This may be increased if necessary. The bowels must be kept in a soluble condition, and one teaspoonful of chlorate of potassa saturated solution given every three or four hours in a little water.

If the patient is not plethoric the cause of convulsions must be looked for in another direction. It will be found

in an irritation of the stomach, bowels, bladder, womb or vagina; or in a condition of general anamia of the patient. In any of these conditions, remember, you are not to bleed. If it is in the stomach, give an emetic of twenty grains of ipecac dissolved in warm water; as soon as it has operated, an injection of two ounces of castor oil, two ounces of molasses and four ounces of warm water must be thrown into the rectum, the patient to take one teaspoonful of Hoffman's anodyne in some sweetened water every two hours; and as soon as there can be an action had on the bowels, Dover's powders in five or six grain doses, every four hours.

If the cause is an irritation of the bowels, get an operation from them with senna and salts, and the enema above described; then use the anodyne treatment as above recommended. If it is the vagina, inject into it half a pint of slippery elm tea or flax seed tea, with twenty or thirty drops of laudanum, every hour, and the above treatment to the bowels, and the anodyne. If it is from the womb, the above treatment must be had recourse to; and if it fails, the contents of the womb may have to be expelled. If it arise from a general debility of the system, in addition to the above treatment recommended, brandy and quinine must be given in medium doses. In addition to the above treatment full doses of bromide of potassium may be used in any form of puerperal convulsions, and it will be found to do more, perhaps, than any other article known in the science of medicine toward calming and relieving spasm. In all forms of spasm it is worthy of a fair trial. The dose is from three to ten grains in water, or in pills, three times a day.

PUERPERAL FEVER.

This fever is produced in lying-in women by a poisoning of the blood. A poison of some description is introduced into the fluids. Dr. Ferguson says that "the phenomena of puerperal fever originate in a vitiation of the fluids, and that the various forms of puerperal fever depend on this one cause of vitiated blood and are readily deducible from it."

Dr. Bedford says: "But you may very naturally ask, what is this poison, and how does it reach the blood? The real essence of the contaminating element it may not be so easy to explain; it is of those mysterious, subtile somethings which is more or less frequently met with, exhibiting varied pathological phenomena, and oftentimes resulting, with remarkable promptitude, in the extinction of life. You may call it, after some of the older writers, a *ferment* or a *morbific matter*, but this in no way facilitates the solution of the inquiry—what is this poison?"

Blood poisoning, *toxemia*, is a generic term, and exhibits several varieties; in one instance it results in scarlet fever, in another in small-pox, in another in measles, in another in puerperal fever.

"If we can not explain," says Bedford, "the essence of the poison, yet observation proves that its influence on the economy may be very materially affected by certain conditions, such as the state of the atmosphere, the locality," etc.

The testimony is ample, showing a connection between puerperal fever and erysipelas. The two diseases may prevail simultaneously in the same neighborhood; or if erysipelas alone prevail, a third party may communicate, from a patient affected with it, puerperal fever to a woman recently delivered.

Trousseau says: "The lying-in female exhibits a peculiar morbid opportunity, and presents a remarkable pathological aptitude for the malady."

Although, as a general rule, puerperal fever attacks the parturient female, yet it should be recollected that it is not exclusively confined to this class of patients. Young women, married, and non-pregnant women, the new-born child and the fœtus in utero, even when the mother has no symptoms of the disease, are all liable to the affec-Instances are recorded of its existence under these circumstances, and what may surprise you still more, it has been shown that, in some cases, the male, if subjected to the peculiar poison known to generate the disease, will become sick and exhibit lesions more or less in accordance with those found in women affected with puerperal fever. Both in the sporadic and epidemic puerperal fever the special poison generating the disease may originate in the person of the parturient woman and be conveyed into her blood through the absorption of putrid coagula, portions of placenta, &c.; but there are other modes by which the poison may be communicated.

Puerperal fever is often, in my opinion, confounded with simple *peritonitis* and *metritis*, purely accidental and, if you choose, sporadic; totally unconnected with epidemic or typhoid influence, and liable to occur from cold, or the exercise of any other ordinary agency.

IS PUERPERAL FEVER CONTAGIOUS?

I do not deem it necessary to cite particular examples in which puerperal fever has been conveyed through the principle of contagion. They are so numerous and so free from all doubt—in a word, they are so conclusive, that I can not conceive how they can be regarded otherwise than completely demonstrative of the point at issue. I have already remarked that puerperal fever may, under certain circumstances, originate with the patient herself. She may, so to speak, inoculate herself with the noxious element through absorption of putrid coagula, or portions of the placenta remaining in the uterus; or she may derive the affection from the passage of some of the products of inflammation into her blood; or the translation of the disease may be by contagion through the intervention of a third party; and again, the inoculation may be traceable to the hand of the accoucher carrying the poison into the system during his vaginal explorations. It is now, I believe, very generally admitted that the laws of contagion can only operate when the disease thus communicated is the product of an animal poison; and it is also, in my judgment, clearly established that puerperal fever is rightfully classed among the zymotic diseases, or those whose existence depends on the presence of a noxious animal material.

Divisions.—There are two distinct varieties of this disease—one known as the *sporadic*, the other assuming the *epidemic* form. The characteristic of the former is that it is an isolated affection, and does not extend; while the epidemic variety is not limited to one or two cases, but involves districts and neighborhoods, oftentimes proving frightfully destructive to life.

SYMPTOMS.

As a general rule, in the *sporadic* form, before there is the slightest shade of suspicion that puerperal fever is at hand, the very first abnormal condition of the patient will be an accelerated pulse; be vigilant, therefore, when the pulse becomes quickened after delivery; although it may not be followed by peritonitis, yet it portends evil. The disease ordinarily commences its development from thirty to forty eight hours after child-birth; next to the quickened pulse will be a rigor of more or less force. Succeeding the rigor will be exquisite tenderness over the abdominal surface, a heated and dry skin, with a pulse ranging from 120 to 160 beats in a minute. The tongue is sometimes dry and extremely red; again it is coated and slimy; there is distressing thirst, with a respiration rapid and short. Nausea and vomiting frequently ensue: the lochial discharge usually becomes suppressed, as also the milk secretion; but these, in some cases, will go on without interruption. Although the skin is generally dry and hot at first, as the disease advances it becomes moist and clammy. There is a notable change in the countenance—it is expressive of great anguish and sunken, with a circumscribed lividity around The bowels are confined at first, but afterthe eves. ward diarrhea not unfrequently sets in; the urine is highcolored and scant. There is in the progress of the affection a marked distention of the abdomen, and this may arise from a flatulent condition of the intestines or from a sero-purulent effusion, which is one of the ordinary attendants on the disease, more especially when it proves fatal. Commonly, when the effusion takes place there is a cessation of pain, which often deludes the friends into false hope, for, under the circumstances, the absence of pain is one of the preludes to death—the other fatal symptoms consisting in the extreme rapidity of the pulse, which becomes weaker and fluttering, with cold extremities; the patient lapses into unconsciousness; there is a low, unintelligible muttering, together with subsultus tendinum or twitching of the muscles. These are the closing phenomena, and are soon followed by death. One striking characteristic I have not mentioned is, the patient remains on her back, with her knees drawn up. This position is assumed to relieve the tension of the abdomen.

In the *epidemic* form of the disorder the symptoms are somewhat modified. As a general rule, there is increased rapidity of the pulse, and from the violence of the poison a depressed condition of the forces is noticeable at the very invasion of the malady; the distension of the abdomen is much earlier developed and the disease is more rapidly fatal, sometimes destroying the patient in twenty-four or thirty hours.

It need scarcely be remarked, after what has been said about this disease, that the *epidemic* puerperal fever is one of the most fatal disorders of the lying-in room. Even in its sporadic type the malady, although much less fatal, is full of danger and requires prompt and careful treatment. During the progress of the malady the careful observer will be enabled to foresee with prophetic truth its fatal termination by the presence of certain significant indications. You may have abiding faith in the pulse. If it should not exceed 120 beats in a minute, it may be regarded as most favorable; but how different if it reach and continue at the rate of from 140 to 160. A cessation of pain, without any diminution in the pulse, accompanied with an anxious and drawn countenance, oppressed breathing, showing imperfect decarbonization of the

blood; involuntary intestinal discharges, the cadaveric odor, &c., may justly be regarded as the precursor of dissolution.

When puerperal fever prevails as an epidemic there can be no embarrassment in distinguishing it from other disease; the lines of the affection are so well defined that the close observer will readily appreciate its existence. The sporadic form may be mistaken for metritis (inflammation of the womb). By using proper care this need mot be; as in metritis the tenderness is confined to the womb, while in puerperal fever the whole abdomen is tender and painful. Practically it would make no difference if these diseases were confounded in your diagnosis, for the treatment would be almost precisely the same.

TREATMENT.

There is too much generalization in the treatment of puerperal fever; the same remedies have as a general thing been relied upon by practitioners in all cases of the fever. This is a fatal mistake, and one reason to my mind that it has proved such a scourge to lying-in women. One school of practitioners have relied entirely upon depletion in every case, while another school, with equal confidence and zeal, have relied in every case on stimulants and tonics. These are the two extremes, and extremes may always be set down as wrong in medicine, as well as in politics and religion. If each case of puerperal fever were of the same grade and exhibited the same amount of inflammatory action, the depletory course, at least in the commencement, would be but bad therapeutics. But it is a fact well known to the medical student that there are two distinct grades, differing widely. We have, even in its epidemic garb, what may be termed inflammatory puerperal fever; and, again, the disorder will exhibit itself with all the phenomena of depression, simulating at the very inception the type of a low typhoid affection. If this be so, and its demonstration will be clearly recognized at the bedside, it follows as a fundamental principle in therapeutics that the treatment of the two grades can not be identical. Stimulants and tonics in the former would certainly prove injurious, while depletion in the latter would prove disastrous. The true physician, then, will come to the rescue of nature, and when he sees her overwrought will try to relieve her of that undue excitement, and when he finds her depressed will sustain her.

At the very commencement of the attack in the inflammatory grade it is well to administer a cathartic. One of the following: calomel ten grains, jalap ten grains, tartar emetic fourth of a grain, and in two hours give a full dose of the citratized magnesia, which must be repeated every two hours until free action is had upon the bowels. Or, what may be better and more prompt, take croton oil four drops, crushed sugar one teaspoonful, mucilage of gum arabic one ounce; to be taken a teaspoonful every fifteen minutes until free action is had upon the bowels. Then give ten or twelve grains of Dover's powders, and in two hours one grain of opium, which must be repeated often enough to keep the patient well under the influence of the narcotic. Upon opium we must chiefly rely in this disease. It does not always require tonics, nutrients or stimulants to assist nature in the performance of her labor. Sometimes there is too much excitement. This state, if allowed to continue long, will produce a corresponding depression. In a case like this our duty is plain to lessen the excitement. This has generally been done by bleeding, which not only lessens it, but robs the system permanently of the sustenance that it is sure to need before the case is over. The crimson fluid of life once drawn from the system can not be soon replaced-if, indeed, it ever can. What would be thought of a general who would kill a large portion of his own men in order to hasten the attack of the enemy and make the contest more equal? It would be about as rational as to destroy, by bleeding, a part of his patient's life, and bring on what may be termed the second stage more suddenly. When we find nature over wrought it is necessary to abate the excitement, which may be done by the cathartic and opiates. After the first cathartic the bowels must be kept open by injections. In the commencement of the treatment a flannel cloth should be wrung out of warm water, and spirits of turpentine be dropped freely upon it, and then laid upon the bowels, changing it often. The turpentine emulsion should be given all the time every six hours. Ten grains of nitrate of potash in a tumbler of water or gruel should be also used three or four times a day. This may be termed by some rather "heroic treatment," but it is a formidable disease, and if the symptoms are not met and checked promptly, the practitioner knows too well how fatal the consequence will be. The great foe will surely and suddenly claim his victim; there is no time to be lost; a prompt and judicious stroke must be made or death will soon close the unhappy scene.

In the adynamic form of the disease—that form characterized at the very commencement by a sinking of the forces—the depressed or typhoid grade, depletion is not to be attempted. The bowels, however, must be evacuated. This had better be done by the citratized magnesia in a full dose, and an injection of castor oil one ounce, molasses one ounce, brandy one ounce, and warm

water three ounces—all to be thrown well up into the bowels.

As soon as action is had upon the bowels quinine in five grain doses should be given every three hours until the peculiar dizziness of the head is felt with the roaring in the ears, then the dose should be diminished, but still given so as to keep the patient under its influence for several days. Brandy toddy may be used at the same time or good Port wine. From one-fourth to half a grain of morphine or one grain of opium should be given every three hours until the patient has got under its influence, and then it should be repeated in quantities sufficient to keep her under its influence for four or five days. The nitrate or chlorate of potash, or the turpentine emulsion, should be used three or four times a day during the entire treatment, with the flannel cloth wrung out of warm water and turpentine upon the abdomen.

But, alas! how often are our best directed efforts made negative by the inexorable demands of the merciless enemy—death!

This, however, must not deter us from faithfully performing our whole duty to the poor sufferer; by perseverance and energy we can in this disease, as well as others, save a human life and rob the grave, at least for a while, of its victim.

Prophylactic or Preventive.—I do not mean by preventive that I can offer any advice that will insure the lying-in female against puerperal fever. But I have already stated that it may be conveyed and communicated by a third person. Now, what I want to offer is this—if the disease is prevailing, persons who have been with and waited upon and handled a patient laboring under it should not be admitted to the lying-in room; and the physician in attendance on such patient should

not wait upon a lady in parturition without first thoroughly washing his hands—not only in soap and water, but in a solution of chloride of lime, and brush his nails well with a nail brush; he should also change his clothes. No precaution should be neglected when there is a possibility of spreading a disease so fearful as puerperal fever. Dr. Semmelweiss has found that puerperal fever may be produced by any fluid matter in the state of putrefaction, communicated by linen, by a catheter, by a sponge, by small particles of the placenta, or even by the ambient atmphosphere impregnated with the foul substances.

When the disease is prevailing in an epidemic form every lying-in chamber should be kept well sprinkled with a solution of chloride of lime. Remember, if one patient should be saved from an attack of this terrible disease, it will amply repay for all your prophylactic treatment.

PUERPERAL MANIA.

This malady may manifest itself during gestation, at the time of labor or some days subsequently; again, it may become developed during the progress of lactation, or it may follow weaning. Instances have been recorded of its having occurred in very sensitive women immediately after conception, yet it is generally conceded that it is most liable to become developed a few days after delivery and in the progress of advanced lactation. It consists in a derangement of the mind, agitation, excitement, suspicion and irritability of temper; or it may be characterized by a derangement of the mind, moroseness and melancholy. It is a disease of irritation and exhaustion.

SYMPTOMS.

Suspicion is a common symptom; sometimes there will be marked obstinacy and moroseness; the husband and infant become objects not only of indifference, but of actual dislike; there may or may not be febrile excitement; the pulse is sometimes unchanged, and again it is rapid, with more or less fever. The patient will occasionally become extremely violent in manner and language, and much vigilance will be required to prevent her from inflicting injury upon herself and child. A very uniform and early symptom is restlessness soon after delivery and inability to sleep; the patient is wakeful, throwing herself about the bed and sometimes sighing. This state of watchfulness should always be regarded with apprehension, and means promptly employed to procure sleep. The digestive functions are much disturbed, the tongue coated and slimy, the bowels irregular and the urinary secretions defective. These are the symptoms characterizing one form of the mania.

In the other form of mania—melancholic—the symptoms are somewhat different. Here, in lieu of excitement and violence, there is marked depression of spirits; there is, if I may so term it, a deep melancholy pervading every look and act of the invalid; she is silent, listless and indifferent to everything passing around her; the pulse is normal, with more or less deranged digestion. In one word, she is an object painful to contemplate, and presents one of those pictures in real life well calculated to deeply impress the observer and call forth his sympathies. The prognosis may ordinarily be favorable. I say ordinarily, for there are occasionally certain conditions of the disorder which portend a fatal result. These conditions are, rapid pulse and continued restlessness at the very

inception of the malady. When they exist conjointly they are to be regarded as tokens of no good. Happily the great majority of cases are not characterized by the quickened pulse, although watchfulness is a common attendant. The average duration of the malady, under judicious treatment, may be set down at from a few days to six months, while a permanent aberration of mind is the exception.

TREATMENT.

I have said before that the disease is one of exhaustion and irritation. With this cardinal fact before you, you will have the key to the treatment. Your course will be to repair the waste the system has undergone and allay the irritation. The first can be accomplished only by nutriment; but nutrition is not an exclusive process, it is but one link in a chain of processes. Food taken into the stomach will not furnish nutriment unless the digestive apparatus does its part and the food is digested. I have already said that the digestion in this disease is disordered, as shown by the coated tongue, fetid breath, loss of appetite and irregularity of the bowels. Therefore, the broad indication is to administer a cathartic. For this purpose, take six grains of calomel and twelve grains of rhubarb; follow this in about six hours with a dose of castor oil or a Seidlitz powder or the citratized magnesia.

If there be much heat about the head evaporating lotions must be applied, with warmth to the feet by means of warm bricks or bottles of hot water. If there be much febrile excitement sweet spirits of nitre may be given, one teaspoonful every hour in two tablespoonfuls of cold water, and aperients used, such as citratized magnesia. When proper action is had upon the bowels and the

febrile excitement is subdued, which will soon be done. the next and most important thing to be attended to is the irritability of the system, and the sooner sleep can be induced the better. For this purpose, take Hoffman's anodyne one ounce and add to it two grains of sulphate of morphine; give one teaspoonful of this preparation in two tablespoonfuls of sweetened water every two hours until an impression is made. The patient must be allowed a generous and nutritious diet; articles easily digested should be selected, and if it is not contra-indicated she should be allowed animal food freely. Remember, the great object is to build up the system and allay the irritability. For this reason her room should be kept quiet, and nothing allowed that would be calculated to excite or irritate her in the least; above all, meddlesome and inquisitive friends must not be allowed in her room. She should never be left alone for a moment, for fear she should commit some act of violence on her person. stances are not wanting in which this has been done. As she recovers, her mind should be pleasantly occupied by pleasant conversation, drives in the country, good music. etc., etc.

PHLEGMASIA DOLENS—"MILK LEG."

This disease is generally known in this country by the name of *milk leg*. It consists of imflammation of the veins of one of the legs, generally the left leg, but it may attack both; this, however, is very rare. In fact, the disease is a rare one, only occurring, according to statistics, about once in four or five hundred cases.

SYMPTOMS.

The prominent symptom in "milk leg" is pain and swelling. It usually develops itself a short time after parturition; it may be developed during pregnancy, or, according to some writers, in the non-pregnant female. It usually commences with pain in the groin, followed soon by swelling, and always extending downward; sometimes the pain will commence in the calf of the leg. When it commences in the thigh the femoral vein at the groin can be felt with the finger and traced down the thigh; it imparts a sensation of hardness and rolls under the finger like a cord. Pressure upon this vein occasions intense suffering, while pressure on any other part occasions very little, if any, pain. Sometimes the first symptom experienced is a chill of more or less duration. Again, the first indication is a pain in one or the other side of the pelvis. The symptoms are not at all uniform, and very nearly resemble in many respects those of iliac and crural phlebitis. As above stated, pain and swelling of the leg are the prominent symptoms.

TREATMENT.

The treatment should commence with a cathartic. Some of the salines should be used for this purpose—the citratized magnesia in full dose will answer an excellent purpose. The indications are, first, to subdue the inflammation, then to bring about absorption of the effused fluids and establish a healthy action of the veins. For this purpose the bowels must be kept in a soluble condition by the use of the saline cathartics and the nitrate of potash, given three times a day in twelve or fifteen grain doses in a tumbler of water or gruel.

Sulphate of morphine should be given the patient in one-fourth to half grain doses to quiet the general irritability of the system, (which is always a prominent symptom) and to procure sleep.

After the inflammatory symptoms have begun to subside a warm bran poultice applied to the limb will afford much relief; the belladonna ointment smeared over the limb, or a liniment of equal parts of chloroform and sweet oil rubbed on the limb, will usually prove advantageous.

If the liver appears sluggish, with a dry skin, eight grains of blue mass at night, with Seidlitz's powders enough in the morning to move the bowels, should be used. After the inflammatory symptoms have passed away, measurably, which will be in four or five days, the iodide of potassium should be taken. Take iodide of potassium two drachms, water four ounces—dissolve and give one teaspoonful three times a day in two table-spoonfuls of sweetened water. This must be continued

for three or four weeks. If the patient seems irritable and restless at any time she should have morphine. If she should become feeble she must have good, nourishing, but easily digested, nutritious food; she may also be allowed some good Port or, what is better, Norton's Virginia Seedling wine, or she may require some quinine. The limb should be kept in a horizontal position, and great care taken when the patient begins to improve that she does not get a relapse and bring the disease into a regular chronic state, from which it would take it a great while to recover, if, indeed, it ever did.

INFLAMMATION OF THE WOMB.

METRITIS.

This disease seldom occurs except in women who have aborted, or in parturient women, in whom it may occur at a period varying from three days to one or two weeks after delivery. The inflammation is confined to the proper substance of the womb.

SYMPTOMS.

A hot, dry skin, preceded by a general feeling of chilliness and nausea, pain in the head, thirst, furred tongue, rapid pulse, and all the symptoms common to inflammation. The characteristic symptom is a constant pain in the womb.

TREATMENT.

The same as recommended for *puerperal fever*, with the exception that warm water injections will be found very useful in the treatment of inflammation of the womb, both as auxiliary and to keep the parts clean.

The disease runs its course pretty rapidly, and the treatment must be prompt. It terminates favorably by resolution, or unfavorably by abscess, softening of the womb or gangrene.

The general treatment in this disease should not differ from the general treatment of inflammation. The patient must be sustained or the disease will crush her; not only is this the case in this, but in all other diseases.











